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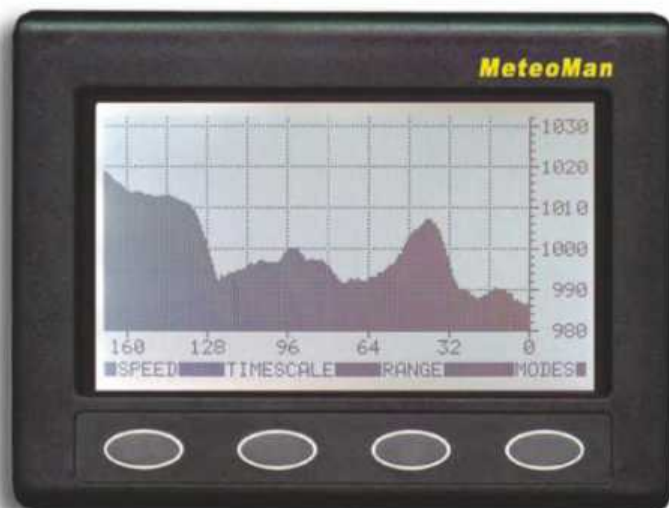
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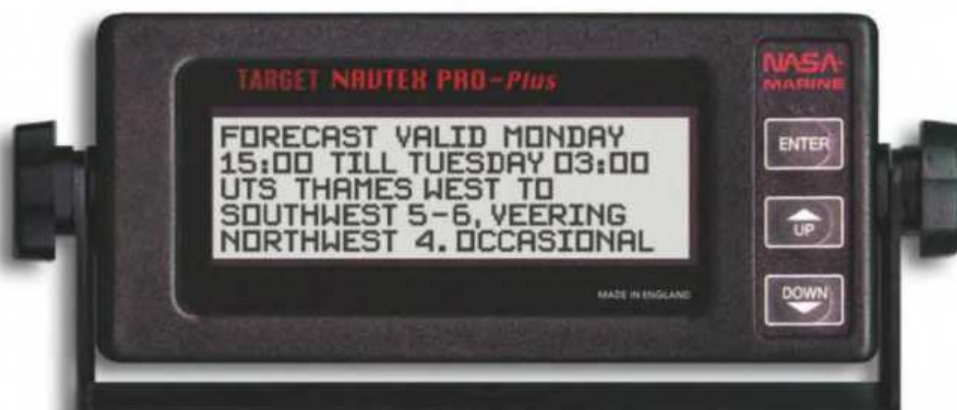
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PBO Contents

Welcome to the December 2015 issue

**SAVE
MONEY AND
SUBSCRIBE!**
Great offers on
pages 38-39

REGULARS

- 5 Waiting for the tide**
The editor's welcome to this month's PBO
- 6 News**
Cat-carrying sailor jumps to safety, Hurley owners' golden anniversary... and more
- 9 PBO products and services**
Books and plans from the PBO Shop
- 12 Regional news**
Consent refused for Navitus Bay wind farm, Henry V warship found... and more
- 14 Readers' letters - your views**
- 16 Dave Selby**
Walking off with a prize
- 18 Sam Llewellyn**
An object lesson in obsequiousness
- 20 Andrew Simpson**
No sacrifice too great
- 44 Ask the experts**
Water in the engine head, tackling complete removal of antifouling, plus more reader queries answered

GEAR

- 30 17 mains chargers**
Compared for speed and reliability
- 52 New gear**
PBO looks at the latest marine products
- 66 Winter gloves**
Tested for warmth and dexterity

TESTED

TESTED

PRACTICAL

- 27 Dual charging alternatives**
PLUS how to install a VSR
- 40 Step-by-step service for a turbocharger**
Expert advice and useful hints
- 50 Making a 2-in-1 table**
...and new cabin headlining, PLUS more reader tips
- 57 DIY hull repairs after a grounding...**
...and carrying out modifications
- 60 Sharpen a traditional saw**
Keep an edge on a trusted tool
- 74 Restoring a catamaran**
Heavenly Twins, scrubbing up well
- 84 Making a windscoop...**
...for better ventilation
- 98 Cockpit dodgers or weather cloths**
Hints and tips from the PBO Sketchbook



74 Restoring a catamaran

BOATS

- 22 An overseas overview**
Peter Poland's pick of foreign-built best-selling boats from 28-30ft
- 46 40 years, 40 boats**
One reader's boat-owning history

SEAMANSHIP

- 61 Curing a heavy helm**
Causes and solutions
- 78 Into the mouth of the dragon**
A reader is forced to dive into sinister waters to effect a running repair
- 82 Round the Island Race**
Facing a challenge for a worthwhile charity

CRUISING

- 36 Snapdragon in Scotland**
Hantu Biru's farewell cruise in the Kyles of Bute
- 70 The River Dart**
Explore from Dartmouth to Totnes
- 86 Midway to the Med**
Visiting the H2O Marina in St Jean de Losne

CHRISTMAS GIFTS

- 80 The big Christmas give-away**
Over £3,000 worth of goodies up for grabs

**WIN THE PBO
PROJECT BOAT!**

See page 10 for details



Cover photo: PBO Project Boat Hantu Biru, a Snapdragon 23



22 An overseas overview



70 The River Dart



40 Step-by-step service for a turbocharger

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Waiting for the tide



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Your boat, your home, your friend

A boat is more than an object. Read any of the great works of marine literature, factual or fictional, and the author will find some way to convey that a sailor always sees their vessel as more than a tool or a means to an end.

It's unsurprising, perhaps. If you cruise, then you spend prolonged periods on your boat. If things go wrong, you can't just drive straight to the nearest garage, as most modern car owners do – you try and fix them. And it may be a cliché, but in tough conditions the crew will usually get scared before the boat. A boat is what makes us at home on an inhospitable element, they look after us and in return we give them care, attention and love.

The more time you spend on board and the more you achieve, the closer this bond becomes. Patrick O'Brian understands this perfectly in his description of the relationship between his hero Jack Aubrey and his first permanent frigate command, *Surprise*, on which the books suggest he spent time as a midshipman and in whose command he carries out many of his most daring exploits. The bond he develops with the ship is so strong that he and his friend Maturin acquire her as a private command later in life.

I have no doubt that Julian Mustoe, who tragically lost his yacht and home of 15 years, *Harrier of Down*, while under coastguard tow, would hardly disagree. In a few short minutes he watched his home and his livelihood slip to the bottom of the ocean. He also watched a friend. He must feel devastated, and I wish him all the best in getting back on his feet and back on the water in the near future. You can read his story on page 6.

The fact that Julian's loss happened under tow and while he was asleep, having temporarily relinquished responsibility for his boat, helps to

highlight another point, made by Martin Bence-Wilkins, the author of the first item in our Letters pages (see page 14). Martin has had two poor experiences with contracted work on his boat, which could have had disastrous consequences.

It comes down to a matter of care.

The priority of the lifeboat service and coastguard is, rightly, the preservation of life. In Julian's case, his life was secure, but no one noticed that his boat was taking on water until it was too late to do anything about it. In Martin's case, the contractors had, they thought, done the job, but they failed to check their work. It was not their boat or lives at risk.

The lesson from both these stories, different as they are, has to be that the only way to look after your boat to your satisfaction is to do it yourself. Julian would have been exhausted after the

Your boat is not your rescuers' responsibility

ordeal of the rescue and would have felt that his boat was now in safe hands, but if

someone had spotted that *Harrier* was in trouble a bit earlier she might yet be afloat. Most of us will, thankfully, never be in that position, but if you are ever in a rescue situation it's worth remembering that your boat is not your rescuers' priority or responsibility. Similarly, even if you pay someone to work on your boat, it's worth taking the time to check and understand the work that has been done because, next time, the professionals might not be on hand.

This month, we say a happier farewell to our project boat as we take her for her final sail in PBO's hands before she goes to her new owner – there's still time to enter our competition at www.pbo.co.uk/winहतubiru. And don't miss our big Christmas giveaway, featuring many of our best-reviewed products of 2015 and comprising a prize worth more than £3,000: see page 80 for details.

Fair winds,

David Pugh

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'All I owned is now at the bottom of the North Sea', says 82-year-old sailor

Round-the-world, liveaboard yachtsman Julian Mustoe loses stricken 25ft yacht *Harrier Of Down* under coastguard tow: 'I'm very distressed at the loss of my boat'

Liveaboard yachtsman Julian Mustoe lost all his possessions when his stricken 25ft yacht *Harrier of Down* sank while under coastguard tow.

The 82-year-old, who sailed solo around the world between 2001 and 2012, has told PBO of his devastation at losing his home of the past 15 years. He said: 'I'm very distressed about losing my boat. I felt as if I was watching an old friend drown.'

For the past three years Julian and *Harrier* have been based primarily at Plymouth, Ipswich and Lerwick in the Shetland Isles. The single-handed yachtsman was just beginning a new voyage to the Hanseatic ports of the Baltic when disaster struck on 8 October 2015 in the North Sea. He was rescued by the Norwegian coastguard after his yacht suffered steering gear failure in rough seas. Rescuers began to tow *Harrier*, but his beloved cruiser took on water and sank. Julian, who is the author of the book *The Voyage of the Harrier*, said: 'Just about everything I owned in the world is now at the bottom of the North Sea. It's taking a bit of time to get my affairs back in order.'

The fateful voyage began on 3 October 2015, when Julian set sail from the Shetland Islands to Bergen in Norway, 200 miles away. Following a favourable breeze then unexpectedly calm conditions over the first couple of days, a strong wind came in from the east and increased to Force 7-8, a near gale. Julian said: 'I hove-to to wait until the forecast wind should return.' The



Harrier of Down sinks on the tow line

seasoned sailor deployed his parachute-type sea anchor and settled down to await a change in the weather, describing conditions as 'uncomfortable and wet, but not dangerous.'

On 7 October, the steering gear failed, something Julian says 'had nothing to do with the bad weather, and could have happened just as easily to a large, fully-crewed yacht.' He added: 'The disintegration of a solid lump of stainless steel was the very last equipment failure I had anticipated.' The yachtsman enquired if the Shetland lifeboat could come out nearly 100 miles and tow him back to Lerwick. The Lerwick coastguard sent out a rescue helicopter, to which Julian responded that he needed a tow, not an air rescue. Lerwick then sent a request to the Norwegian coastguard service to fetch him.

During the night *Harrier* continued to drift downwind, passing within two miles of the Alwyn North gas platform. At

went to the ship's bridge, from which I could see my lovely little boat struggling for her life. Slowly she sank lower into the water.' He added: 'I do not know what went wrong. Whatever was the cause she was gone, and with her most of my possessions.'

Julian arrived in Bergen on 9 October and flew to the UK the following day. He is currently staying with friends in Norfolk. The loss of *Harrier* was not covered by insurance. Julian said: 'If you're sailing solo, insurers won't touch you with a bargepole. I was insured against third-party, but not loss. I sent a lot of money to the bottom of the sea as well as my possessions, including my computer and cameras. Effectively I'm starting from scratch again.'

■ Julian's friends have created a JustGiving website to raise funds to get him back on his feet: <https://crowdfunding.justgiving.com/harrierappeal>. At the time of going to press, more than £6,600 of a £25,000 target had been raised.



Julian is helped from *Harrier* onto the Norwegian RIB

Cat-carrying French yachtsman jumps to safety

Solo sailor Emmanuel Wattecamps leapt from his stricken 9m (30ft) yacht to a Swedish ice-breaking ship amid heavy seas in the north Pacific.

With his pet cat tucked inside his jacket, the 28-year-old Frenchman, originally from Brittany, was rescued from *La Chimere* on 20 October, approximately 400 miles south of Cold Bay, Alaska. His leap to the ship *Tor Viking* was filmed by a C-130 Hercules Coast Guard plane monitoring the rescue.

Emmanuel said: 'My beloved new pet Pipalup and I had just set sail for Chile when a rogue wave momentarily capsized *La Chimere*, with Pipalup and myself inside the cabin. The boat began to take on water immediately once turned back upright. I give all the thanks in the world to the United States Coast Guard for responding to my distress call and sending help.'

Emmanuel bought *La Chimere* in 2013 and made port in Spain, Portugal, Bermuda, Newfoundland,



French sailor Emmanuel Wattecamps and his cat Pipalup

Greenland and the Northwest Passages before reaching Dutch Harbor, Alaska. The cruising yachtsman found the stray cat at Dutch Harbor and said: 'She took to the rocking of the sailboat as if she was born for life at sea.'

■ Emmanuel has set up a fundraising page to buy a new boat: www.gofundme.com/wb6wj8ts, which at the time of going to press had raised more than €6,000 of a €20,000 target.

Over-sized buoyancy aid was a factor in teenage motorboat tragedy



An official investigation into the death of Emily Gardner, a 14-year-old who died when a motorboat capsized off Brixham, South Devon, has been published.

On 2 May this year, a Fletcher speedboat with one adult and three teenage children on board capsized after encountering a large wave. Three of the occupants swam clear of the upturned hull but Emily became trapped. Despite attempts to free her, she was only recovered following attendance of the RNLI lifeboat 25 minutes later. Medical treatment started immediately, but she never recovered consciousness.

The Marine Accident Investigation Branch (MAIB) investigation found that Emily sadly drowned as a result

of the strap of her adult-sized buoyancy aid – which was not a close fit – snagging on the aft starboard mooring cleat of the speedboat after it capsized and sank by the stern. The boat's relative course and speed contributed to the capsize, but other potential factors were the fitting of a new propeller, the low quantity of fuel in the bow tank and the manner in which the speed was increased.

The report concludes: 'If the boat had met the requirements of the Recreation Craft Directive (RCD), it would not have sunk by the stern.' As a result of the tragedy, the Royal Yachting Association intends to publish an article on boat design in the RYA Magazine that will include the potential shortcomings of boats constructed prior to the introduction of the RCD in 1996 and those that might have been substantially modified when sold second-hand. The findings of the MAIB report will also be publicised through British Water Ski and Wakeboard's network and with the launch of its new driving syllabus.



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Disabled yachtsman on round-the-world unassisted voyage

Keith White is attempting to quite literally sail single-handedly around the world, after losing the use of his arm in a motorway accident in 1991.

The yachtsman crossed the nominal starting line between the Lizard lighthouse and Ushant on 26 October. The non-stop circumnavigation of the globe, unassisted, is sure to test the limit of Keith's mental and physical capability. Keith's boat, *Marathon*, a Feeling 1350, is only partly modified to accommodate his disability.

Keith, who lives on the Isle of Wight, is no stranger to single-handed sailing challenges, having also sailed anticlockwise around the British Isles and across the Atlantic. The journey is estimated to take 10 months, during which time Keith will sail alone.

As well as testing his own endurance, Keith is aiming to



Keith White and his Feeling 1350 boat, *Marathon*

raise £15,000 for two good causes, Save The Children and a foundation to build a replica of the *Cutty Sark* for underprivileged children. Keith said: 'I've been putting all my efforts into preparing for this challenge since 2008. I'm going to be realising a big dream, especially if I can fundraise a significant amount for my chosen charities. I think the biggest challenge will be sailing around the South African

coast, where the Indian and Atlantic Oceans meet. The bottom of South America is also known to be unpredictable.'

Keith isn't afraid of the amount of time he will be spending alone on his boat. He added: 'It sounds strange, but I'm looking forward to it. Sailing alone is the only time I ever get to read a book!' Follow Keith's progress at <http://singlehandedyachting.com>.

Greek cruising update

Boat owners with boats not registered in the EU are able to stay in Greece for longer than six months after the Cruising Association (CA) campaigned against a new law brought about by the Greek government.

The CA was made aware in August last year that Greece had unilaterally scrapped EU-wide rules on temporary importation and substituted instead a six-month-in-12-month rule for non-EU-flagged yachts. The CA protested that this action was illegal under EU law, and by April 2015, when no further progress had been made, the CA lodged a formal complaint with the European Commission. The CA's case was that Greece's action was not only illegal, but would seriously impact upon yachting tourism.

In September 2015 the European Commission advised the CA that the Greek government had agreed to return to EU-wide rules on temporary importation of yachts. The rules allow non-EU-flagged yachts to stay in EU waters (including Greece) for up to 18 months. On application, this can be extended to 24 months. The EU rules specify no minimum time that a yacht must leave EU waters before returning for another 18 months. Proof of having left EU waters may be required, of course. The change in the Greek position has been brought about solely through the actions of the CA, yet the outcome benefits not just CA members but all non-EU-flagged yachts (owned by a non-EU resident).

16,250 visitors flock to Scotland's Boat Show

A record-breaking 16,250 visitors flocked to Scotland's Boat Show 2015 at Kip Marina, Inverclyde.

This marked an increase of nearly 1,800 visitors to the three-day event held between 9-11 October. Organisers of the UK's third-largest boat show said Saturday was the busiest ever day, with nearly 7,500 visitors.

PBO's Project Boat *Hantu Biru* was among the show's attractions, with members of the public invited to step aboard the fully-restored Snapdragon 23. More than 350 people entered the ongoing competition to win her. Alan Rennie of Inverkip said: 'I think she's absolutely brilliant. She proves what you can do to bring back a really old boat.' Former boatyard owner Jim Brown, of Largs, said: 'You've done a beautiful job on it. I've followed it right from the word go. From an amateur (in the best possible way) point of view, it's one of the best renovations I've ever come across; and being a former



Crowds flocked to Scotland's Boat Show at Kip Marina in Inverkip

boatyard owner, I've seen many.'

John and Pauline Langfield, from Preston, drove for four-and-a-half hours to see the PBO Project Boat and attend the show. John said: 'I'm halfway through doing one of my own, a 19ft Sea Witch. It's our first proper little boat and we can't wait to get her on the water.'

Following the success of PBO's Ask the Experts LIVE! event at Beaulieu Boatjumble, we teamed up with RYA Scotland to offer more expert talks during the show in the RYA Scotland Theatre thanks to Sika's Gareth Ross, International Paint's Kate Moss, CB Marine Services' surveyor Colin Brown and Ocean Safety's

Michael Scott who provided liferaft and lifejacket demonstrations.

Other highlights included the chance to browse more than 90 boats that were for sale, free taster sessions in dinghies and the Wheely Boat from Clyde Muirshiel, plus flyboarding demonstrations, musical entertainment from the Isle of Cumbrae Pipe Band and the Inverclyde Rock Choir, stalls showcasing marine equipment, local produce and crafts, helicopter flights, and luxury cars from Rolls Royce, Bentley, Aston Martin, Maserati, Morgan and Porsche.

Holt Leisure Group and Kip Marina's managing director Gavin McDonagh said: 'We are particularly delighted as many exhibitors have already booked to return next year. All at Kip are extremely proud of their show and the fact that it attracts thousands of visitors to see the best of Inverclyde from land, sea and air.'

Next year, Scotland's Boat Show will take place from 14-16 October 2016.

Five British sailors named in World Sailor award shortlist

The diversity of British sailing talent has been acknowledged in the 2015 ISAF Rolex World Sailor of the Year shortlist, with five British contenders in the running for the award.

Five top British sailors have been recognised across dinghy, offshore and inshore sailing disciplines, with Finn star Giles Scott, Volvo Ocean Race-winning skipper Ian Walker and five-time World Match Racing Champion Ian Williams among the nominees for the men's award. Team SCA Volvo Ocean Race skipper Sam Davies, and Sarah Ayton, tactician on board Extreme Sailing Series *The Wave*, *Muscat*, are also included in the five-sailor women's shortlist.



Launched 21 years ago, the ISAF Rolex World Sailor of the Year is recognised as the pinnacle award a sailor can receive for his or her outstanding achievements by the world of sailing. The awards are presented every November to one male and one female sailor, with this year's ceremony taking place on 10 November in Sanya, China. The ISAF Member National Authorities (MNAs) – the national governing bodies for sailing around the world – vote for one female nominee and one male nominee whom they feel deserve the honour of receiving the ISAF Rolex World Sailor of the Year Award 2015, with attendees at the awards also casting their votes.

Storm names chosen

The UK and Ireland's National Met Services have announced the list of storm names chosen by the public for autumn and winter 2015/16.

The pilot project by the Met Office and Met Éireann saw thousands of suggestions sent in. To ensure they are in line with the US National Hurricane Centre naming convention, the weather services are not going to include names which begin with the letters Q, U, X, Y and Z. Names include Abigail, Barney, Clodagh, Desmond, Eva, Frank, Gertrude, Henry, Imogen, Jake, Katie, Lawrence, Mary, Nigel, Orla, Phil, Rhonda, Steve, Tegan, Vernon and Wendy. A storm will be named when it is deemed to have the potential to cause substantial impacts in the UK and/or Ireland. To avoid any confusion, if a storm is the remnants of a tropical storm or hurricane that has moved across the Atlantic, the method of referring to it as, for example, 'Ex-hurricane X' will continue.

Golden anniversary for Hurley owners

The Hurley Owners' Association's (HOA) celebration of the 50th anniversary of the popular marque's glassfibre production facility in Plymouth and the boats it manufactured will take place from 22-24 July 2016.

The BYHH2016 event in Plymouth is open to anyone with an interest in Hurley boats. HOA would especially like to contact ex-Hurley Marine employees or anyone involved with Hurley boats over the last 50 years. To celebrate the historical links between the Royal Plymouth Corinthian Yacht Club,

George Hurley and the Hurley Owners Association, the Royal Plymouth Corinthian Yacht Club have agreed to host the 'Bring Your Hurley Home 2016' event on the evening of Saturday, 23 July 2016.

Programme: Friday, 22 July 2016: Hurley boats gather at King Point Marina. Saturday, 23 July: Hurley boats sail-past. Evening – meal and social/presentation evening at the Royal Plymouth Corinthian Yacht Club. Sunday, 24 July: Visit to Richmond Walk; plaque unveiling (to be confirmed). Email: BYHH2016@hurleyownersassociation.co.uk.

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Sixty years of Wharram catamarans

Back in the 1950s, a young marine archeologist called James Wharram set out to prove that Thor Heyerdahl had got it all wrong.

Heyerdahl's assertion was that the islands of the central Pacific had been populated by people crossing from South America on rafts. The *Kon-Tiki* voyage was intended to prove his point. Wharram was among those who maintained otherwise: that double canoes could have reached the islands from south-east Asia. He wanted to show that these kinds of craft were capable of crossing oceans.

To this end, and inspired by Eric de Bisschop's 1930s voyage from Hawaii to France on a Pacific-style double canoe, he built one himself and sailed it across the Atlantic. *Tangaroa* was just 23ft 6in (7m) long with flat-bottomed hulls, but carried Wharram and his crew of two German girls from Falmouth to Granada, where Wharram built a 40-footer, this time with veed hulls. He sailed to New York and then, in 1959, completed the first west-to-east crossing of the Atlantic in a multihull. Able then to call himself a catamaran designer and ocean sailor as well as a marine archaeologist, Wharram set out on a career that continues to this day of designing catamarans inspired by those of the Pacific islands.



James Wharram and Hanneke Boon with the first structurally-completed hull of the Mana 24. In the background are photographs and records from Wharram's voyage in 1955

A recent gathering was held at Wharram's workshop in Cornwall to mark 60 years since he set sail from Falmouth and to introduce the latest catamaran created with his co-designer Hanneke Boon. At 24ft, the Mana is almost the same length as *Tangaroa* and designed to allow simple, economical home-building from computer-cut plywood panels. Another priority is easy dismantling and trailing to



The Mana 24 is designed for simple and economical home building from computer-cut plywood panels

minimise running costs. The first hull was on show at the anniversary celebration, and as soon as it's joined to the other one and ready to sail, we'll be taking them both for a spin. For Wharram enthusiasts and those in search of economical multihull sailing, this will be a space worth watching. **David Harding** ■ www.wharram.com

David Harding/Sailing Scenes

DIARY DATES

- **London Boat Show**, 8-17 January 2016, www.londonboatshow.com
 - **Irish Boat Jumble**, 10 April 2016, Carrickfergus Sailing Club, Rodger's Quay, Carrickfergus, Co. Antrim, www.irishboatjumble.org
 - **Beaulieu Boatjumble 2016**, 24 April, 9am-5pm, www.beaulieu.co.uk/events/boatjumble
 - **The Transat 2016**, Plymouth will host the race start on 8 May 2016. The Transat is the successor to the original solo race across the North Atlantic, born as the OSTAR in 1960. www.thetransat.com
 - **Push The Boat Out 2016**, 14-22 May, UK wide event with sailing clubs and venues offering discounted and free taster sessions, email ptbo@rya.org.uk
 - **Sail Caledonia 'raid' 2016**, 28 May to 4 June, organised by The Great Glen Boating Club, involves almost 70 miles of cruising and racing through the Great Glen from the Atlantic Ocean at Fort William to the North Sea at Inverness, www.sailcaledonia.org
 - **The English Riviera Leisure and Boat Show**, 28-30 May, inaugural event, Paignton seafront, www.leisureandboatshow.com
 - **ARC Channel Islands Rally 2016**, 20-27 August, www.worldcruising.com/arcchannelislands
 - **Southampton Boat Show**, 16-25 September 2016, www.southamptonboatshow.com
 - **Scotland's Boat Show**, 14-16 October 2016, www.scotlandboatshow.co.uk
 - **European Maritime Day 2017**, 18-21 May 2017, Poole, Dorset, two-day international conference and a family-focused weekend maritime festival, www.poolemaritimefestival.uk
- Send your diary dates to pbo@timeinc.com, see more online at www.pbo.co.uk

Win the PBO Project Boat *Hantu Biru*

On seeing the PBO Project boat *Hantu Biru* at last year's Southampton Boat Show, more than one visitor ruefully commented that 'you can't buy boats like this anymore'. That's true – but you can still win this one!

After nearly four years' restoration, during which the PBO team have sanded, scraped, repaired, refinished or replaced every inch of the boat and her fittings, it's time for her to move on.

The project boat may have been bought for just £510 on eBay, but the restoration bill topped £6,250.

When you consider Snapdragon 23s in good condition go for £3,500-£4,000, it's obvious the project wasn't about making a quick buck: instead, *Hantu Biru* has generated many PBO step-by-step articles – many of which have been collated into the Project Boat Handbook (£4.99), covering everything you need to know about the restoration – and inspired thousands of readers not to give up on their own project boats.

The competition is open to global entries: however, delivery of the boat is restricted to UK mainland only. In the event of an overseas

winner, they will be responsible for delivery to their home port.

The boat will undergo a full structural survey prior to handover, with any recommendations as a result of the survey completed.

The winner will be announced shortly after the London Boat Show in January. You can enter online at: www.pbo.co.uk/winbantubiru.



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SOUTH

NAVITUS BAY PROJECT HALT

Further to the decision to refuse consent for the proposed Navitus Bay wind park announced by the Department for Energy and Climate Change on 11 September 2015, Navitus Bay has decided not to challenge the decision and will not request a Judicial Review. As a result, the project is currently in the process of being wound up. Over the course of the project Navitus Bay Development Limited gathered data from a wide range of offshore surveys and studies. This information will be made available via The Crown Estate's Marine Data Exchange, once transfer and quality assurance processes have been completed, at www.marinedataexchange.co.uk.

TIDAL TURBINES

Five tidal power electricity-generating turbines are likely to be installed near the mouth of the River Arun in Littlehampton Harbour. Test turbines have previously been successfully tested in the river, and the project is currently being reviewed by the Government's Marine Management Organisation. The rotating PowerFrame turbines are designed to operate in water flows of up to 8 knots and, with floats, solar panels and an isolated danger navigation mark, will be clearly visible to boaters navigating the river.

HENRY V WARSHIP FOUND

The wreck of Henry V's warship the *Holigost* has been found buried deep in the mud of a Hampshire river after being lost for hundreds of years. The flagship of the Duke of Bedford was the second of four 'great ships' built for Henry's campaign against the French in the Hundred Years War, and joined the fleet just a month after the Battle of Agincourt in 1415. It was spotted by historian Dr Ian Friel while studying aerial pictures of a medieval breaker's yard at Bursledon on the

CHANNEL ISLANDS

MELINA STAYS ON SEABED

A 13m ferro-cement yacht, *Melina of Fleet*, which hit the Roustel beacon and sank within minutes, will remain on the seabed until salvage negotiations are completed. Four Polish nationals were rescued from the sea after being swept by the tide to over a mile north of the Roustel rock itself on 25 September. Guernsey Harbour Authority divers have removed the two masts, the sails and some deck equipment since they were considered a hazard to shipping, and the hull is now settled in 13m of water just south-west of the beacon. It was hoped to raise the



Tom Harvey

Melina of Fleet hit the Roustel beacon and sank within minutes

UK-registered yacht on the neap tide following the accident, but this was abandoned due to strong north-easterly winds.

River Hamble, where Henry's own flagship *The Grace Dieu* had been found in the 1930s. A subsequent search through records from the time revealed that the *Holigost* had indeed been laid up at the site. Now Historic England is to launch a large-scale archaeological investigation into the warship.

SOUTH-WEST

SPEED CLAMPDOWN

A clampdown is to be launched against boaters and other water users on the River Exe who break the 10-knot speed limit and behave anti-socially. East Devon District Council, with the help of Teignbridge District Council and Exeter City Council, is looking to replace its present, underpowered patrol boat with a new state-of-the-art craft to carry out enforcement and monitor the Exe Estuary habitat throughout the year. Although all marine offenders will be targeted, the council has identified speeding jet-skiers weaving at speed within moorings as a particular target.

DRY STORAGE CLOSURE

Boat owners have voiced their fury at a decision not to allow boats to be stored ashore in quayside car parks in West Looe and East Looe over the winter. They claim it will cost them dearly to find alternative dry storage, and a quayside marine engineering company says it will be badly hit by the move. Looe Harbour Commissioners said that a review of their policy, which previously allowed boats to be stored ashore for around

£30 per metre, showed that they would make more money through car parking charges.

WALES

SWANSEA BAY TIDAL LAGOON FACES DELAY

Plans to build the world's first ever tidal lagoon power plant have been rescheduled. Building of the tidal energy lagoon in Swansea Bay has been delayed by a year as negotiations over the level of UK government funding for the project continue. Tidal Lagoon Power (TLP) received backing by the Department of Energy and Climate Change (DECC) in June. TLP said it had taken a 'pragmatic' decision to delay construction, as talks are ongoing over how much electricity subsidy will be paid. Work was due to begin in 2016: however, TLP has confirmed that the completion date for the project has now been moved from 2019 to 2021.

IRELAND

MAJOR HARBOUR REPAIRS

Work has begun to repair the piers and basin of Courtown Harbour in County Wexford. The €1.5million project includes pre-casting and installing concrete pier side walls and topping each pier with a steel-reinforced concrete deck slab. The harbour itself will be closed for up to eight weeks while the basin is drained and dredged and the harbour walls repointed, this being carried out sometime between the end of November and the end of April.

CONTROVERSY OVER LEOPARDESS

Guernsey's Sea Fisheries Protection Vessel *Leopardess* is soon due for replacement at a cost of around £2.6million. The 18.5m aluminium patrol boat was built in 1998 by the Netherlands shipyard Damen, and the States of Guernsey have already approved a replacement vessel for 2018.

Guernsey boatbuilders AquaStar have suggested that they could build a similar-sized vessel in GRP and save the States roughly £450,000: however, the official line is that the new boat should be of aluminium and constructed by Damen, and the whole operation is now up for discussion within the States of Guernsey.

BREAKWATER COMPLETION?

Hopes have risen that construction of a breakwater to the south-west of Greencastle Harbour will soon be resumed. Work was suspended in 2009, leaving the partly-constructed breakwater stretching 155m from land with a further 40m section submerged, causing strong east-south-easterly eddies on spring ebb tides. Meetings are now planned between the Irish Government, Donegal County Council, harbour users and others to enable the breakwater to be completed.

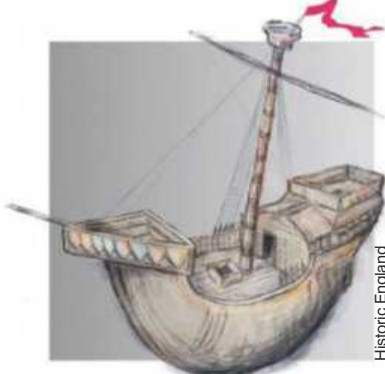
SCOTLAND

NEW PORT EDGAR MARINA

The new Port Edgar Marina, said to be costing £1.2million, will be the new home of the Port Edgar Yacht Club. Inspired by the Fish Market building in Bergen, Norway, the marina will be designed by GLM architects and will be built on the Port Edgar Pier site, by the Forth Road Bridge and Queensferry Crossing in Queensferry South, near Edinburgh. It will boast a restaurant, shops, water-sports facilities, a visitor centre, and hundreds of berths.

DREDGING HALTED

Removal of a sandbar which hampers boats entering and leaving St Monans Harbour was halted after locals protested that the material removed was being dumped illegally. Fife Council admitted its mistake and 12 cubic metres of excavated material was returned to its original position while an alternative means of disposal was agreed with Marine Scotland. It



Historic England

was hoped that dredging would resume in time for the planned total of 100 cubic metres of sand to be removed by the end of October.

NORTH-EAST

RARE DONATION

The Durham branch of the RNLI was surprised to find a several-hundred-year-old coin in the donation box following a flag day collection in the city centre on 3 October. The charity's volunteers were delighted that the collection raised over £1,000, but were amazed when they found a very old and possibly rare silver coin amongst the donated money.

David Hastings, Hon. Secretary of the RNLI Durham branch, said: 'We want to ensure that the person who donated the silver coin didn't place it into our collection accidentally, along with their spare change. We'd hate it if someone had lost their prized lucky charm or historic family heirloom.' David can be contacted at david@1066.com if the coin has accidentally been donated. The coin will

only be handed over if a full description can be provided.

EAST

QUAY IMPROVEMENTS

Major repairs are being carried out to Hythe Quay in Maldon. Sheet piling is being installed along the front of the quay, while work also includes new mooring points, lighting and water and electricity points. It will take around 12 weeks for the work to be carried out, during which the quay will be closed to the public, but it is hoped that it will be reopened by the beginning of 2016.

SOUTH-EAST

DECKHAND DEATH

The company which ran the Woolwich free ferry where a man died while working on board in August 2011 has been found guilty of failing to ensure the health and safety of its crew, fined £200,000 and ordered to pay another £200,000 in costs.

Benjamin James Woollacott, a

deckhand who had been working on board the *Ernest Bevin*, sustained severe head injuries and drowned when he was dragged overboard by a mooring rope while releasing lines that were securing the ship to a mooring buoy on 3 August 2011. He was quickly recovered by the ship's boat with the aid of a Port of London Authority launch and taken to the ferry's south terminal, but despite the best efforts of paramedics was declared dead at the scene.

A Maritime and Coastguard Agency investigation found the risk assessment and procedures in operation had not been recently updated and did not cover the work being carried out. It also became apparent that the crew were not being monitored to ensure compliance with procedures.

INLAND

NEW MARINA PLANS

Plans have been submitted for a new commercial and leisure marina on the River Nene at West Bank Sutton Bridge in Spalding. It will include 100m of commercial and 60m of leisure pontoon moorings, with the potential to add an additional 152m of leisure moorings at a later date. PIR sensor-operated bollard lighting will be provided on the pontoons, and the marina will be owned by Lincolnshire County Council and managed under contract by The Port of Wisbech.

SAFETY GEAR REMOVAL

Safety ladders and fire extinguishers kept at lock-keepers' offices on the River Thames may be removed on health and safety grounds. The Environment Agency says it does not provide any training or equipment for lock-keepers to use to put out boat fires, and the safety equipment could endanger non-trained staff in emergencies. The GMB union says lock-keepers are opposed to the proposal and want the lock ladders to remain in place, while boat owners and the Thames River Users' Group say the plans are 'absolutely ludicrous'.

NORTH WEST

TALL SHIP REFLOATED

Repairs are under way for Liverpool's historic tall ship *Zebu*, which was refloated after sinking at her Albert Dock deep moorings. Salvage experts worked for several days to raise the square rigger. Teams from Hughes Sub-Surface Engineering and Waterwitch Engineering moved the ship away from the side with help from Carmet Tug Company. Eight giant air-lift bags were then inflated to raise the ship to the surface. *Zebu* was then moved to Canning Half-Tide Dock where the owners of the ship, the Mersey Heritage Trust, are carrying out repairs. They also hope to discover what caused the ship to sink in the early hours of September 4.



Jayne Moore

Repairs are being carried out to the historic square rigger *Zebu*

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JANUARY ISSUE ON SALE THURSDAY DECEMBER 3

Contents subject to change

PBO
Bargains of the month...

More great bargains in the Chandlery section starting on page 54

YACHT DROGUES

Usually deployed from the stern using a bridle system, a drogue is best used with a long warp to prevent shock loading. Jimmy Green drogues also feature a webbing loop at the smaller end of the cone for trip line attachment. **PBO Best Buy July 2014.**

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Readers share their thoughts and opinions

LIVES PUT AT RISK BECAUSE OF CARELESS WORKMANSHIP

Contractual obligations

■ As boat owners, we expect annual repair and maintenance work, much of which we undertake ourselves thanks to the useful articles in PBO. However, there are occasions when we need experts to do the work for us, and it is to these I address this letter. Over the last two summers, my boat's engine has required work: firstly to replace the exhaust elbow, and then to fit a new sump gasket. The tasks were carried out by different contractors, and both required the removal of various attachments and disconnection of cables and fuel lines, etc.

On my first sail afterwards in both cases, I discovered (in testing and dangerous situations) the engine's vital elements had not been reinstalled properly. On the first occasion, halfway to southern Ireland during the night, I discovered the batteries had no charge. I was in the ferry shipping lane with no lights, and no propulsion as the wind had just died. Fortunately, I had my handheld VHF to contact passing ferries, who noted my position and informed the coastguard and other ships nearby. When the wind returned some hours later, I headed for Kinsale to fix the problem, and found that none of the bolts fixing the alternator had been tightened.

On the second occasion, I was heading south under engine, about to round Land's End. Upon rounding I hoisted the sails and shut the engine down, but I had miscalculated the strength of the tide pushing me back towards Longships. In spite of several attempts, I couldn't get the engine to restart. Eventually I managed it, somehow, but then had the throttle cable detach itself from the engine. The locking nuts had not been put back! After spending a further £100 I was told that a vital wire had not been connected to the back of the starter motor. I had asked about this when it was being refitted, only to be told it was 'a redundant wire – nothing to worry about'.

Quite rightly, some of you will think I should have checked everything before setting off. Well, I do that now; but surely the engineers undertaking the work should take greater care that vital work is checked and re-checked before handing the boat back, and know that the consequences of failing to do so could be very serious. So I ask all contractors reading this to please check your work, especially the reconnecting of wires and lines, belts and bolts. Next time I need contractors' services, I'll have a checklist of questions to ask to ensure they have done their checks. I suggest the contractors have a checklist too!

Martin Bence-Wilkins, Bristol

Controlled response

■ I wholeheartedly empathise with Dave Selby regarding the inconvenience of controlling an outboard when reversed for manoeuvring (PBO November). Having encountered the same trouble I thoroughly enjoyed reading his article, a masterpiece as usual. To overcome the situation I modified my old Johnson 4, bringing all controls – throttle and gear – onto the top of the motor cowling (see PBO August 2010). A push/pull button takes care of gear shifting and a

small hand-wheel controls the throttle. The advantages are twofold:

- 1) The controls are always in reach.
- 2) There's no confusion on direction: whatever the turning



Controls on top of the cowling

position of the motor, button down is always neutral, up is always in gear, hand-wheel clockwise always closes the throttle, and counter-clockwise always opens it. Incidentally, I added a kill cord at the same time, which had been lacking on this old model.

I don't know if similar modifications could be made on Dave's engine: I was lucky it was possible on mine. Manufacturers could perhaps consider the possibility of offering such a control layout on their new motors.

Sandro Picchio
Vedano al Lambro, Italy

I often practice in the dinghy (which has an extra-long painter), filling the sails and saving diesel, and adding an extra eighth of a knot when sailing. Other uses/advantages have been:

1. Foghorn, with a variable note to worry local whales, dolphins, and cruise ships.
2. Selector of neighbours when mooring.
3. Farewell serenade to bad neighbours.
4. The slide can be used to prime pumps for fluids.
5. The horn is a very good funnel.
6. I have been able, rapidly, to identify friends and foes.
7. Mutes can be used for bailing out, and collecting revenues.

I hope that PBO readers will appreciate that live music doesn't stop with the engine or when the sails go up.

Nick Carter,
Coventry



Nick Carter, slide tackling on board with his plastic trombone

PEYTON'S PICK FROM THE PAST



'Yes, that's it, fully comprehensive cover... credit card number 68059...'

Taken from *Practical Boat Owner* May 1991

Blow by blow

■ I have only just read Sam Llewellyn's article about musical instruments on boats, 'Mutiny on the high Cs' (PBO March 2015) – we've been sailing in Greece and we store the PBOs to read on board. The rest of the year I play bass trombone in a big band, and a bass trombone on a 33ft yacht raises challenges, not least the effect of warm maritime air on a brass instrument. So, I purchased a plastic trombone with a carbon-fibre slide.

Triune times

Re your excellent article about the designs of Laurent Giles (PBO September), I was startled to see a photo of *Triune of Troy*, which I have owned for the past 24 years, and thought your readers might be interested in a few more details about her.

The original owner, Lord Russell of Liverpool, kept *Triune* in Fowey Harbour. Lord Russell served on the war crimes tribunal at Nuremberg and subsequently wrote *The Scourge of the Swastika*. H Innes owned her between 1953-57 and kept her at Whistock's Yard on the Deben. A

relative of mine married the foreman's daughter. Dr (Sir) Charles Evans was the owner between 1960-67: he climbed Everest with Tom Bourdillon in 1953, but they had to turn back 300ft from the summit due to problems with Evans' breathing apparatus.

Chris Elliott (1972-80) later became master of the *James Clark Ross*, sister ship to the Antarctic supply vessel *Endurance*. I met him by chance in a marina in Brittany and again in Dartmouth, which was rather extraordinary as he lives up the Canigou mountain in Andorra.



Peter K Poland

The Laurent Giles-designed *Triune Of Troy* is owned by David Knights

When he bought her he could 'see through her in every direction'. A Cheshire farmer was threatening to burn her so he could extend his barn. Chris kept her in Salcombe near the Island Sailing Club's HQ.

The boat's balance is perfect now but initially it felt odd, in that there seemed to be lee helm even when there was slight weather helm. Giles specified 10lb of lead on the trailing edge of the rudder to balance the buoyancy of the oak: I eventually took this off (it actually weighed 15lb) and replaced it with wood, with instant benefit. The dodgers may also help the balance and sailing performance; they certainly help when lowering sails in that you can let go of the tiller and the boat looks after itself, sailing slowly ahead. Without them, the bow blows off.

One of the best things I have added is a pendulum-servo self-steering gear: it cost under £150 to make and works at least as well as expensive alternatives, with the added advantage of being easy to remove, and does not disfigure the pretty transom.

David Knights
Plymouth

SEADOG OF THE MONTH



■ Snowy is a Bichon Frise, 19 months old when this picture was taken. Here he is checking for any galley activity.

Michael Garrett



Seadogs galore!

Visit our seadog gallery at www.pbo.co.uk/seadogs or scan this QR code with your smartphone.

Send us your seadog photos for our web gallery and your pet may be lucky enough to become Seadog of the Month and win you £30

Saw point

■ As a rule of 'thumb', it may be wise to advise readers not to follow the method of holding a hacksaw shown in two of the photos in your 'Hacked off' feature (PBO November).



Grasping the frame risks your thumb

As a teacher for some 35 years, I always advise users to place an open hand over the far end of the frame and not to place a thumb in harm's way. Grasping the frame as shown in your illustrations is placing the thumb at risk.

Guy W.A Clayton
By email

A fresh twist

■ Re 'I have a cunningham plan' (PBO November), while the article was not factually incorrect it did omit the main benefit of the use of the cunningham.

I came into sailing through dinghy racing and currently have a North 3DL-suited quarter-tonner and regularly use a cunningham in a blow. Sails are considered to have what is often referred to as a fourth corner, in other words the top part of the leech. When a boat is overpowered the mainsail needs to be 'twisted off'. In other words, twist needs to be introduced to the leech of the sail, allowing the airflow to escape from the top part of the leech. 'Banging on the cunningham' does exactly that. Yes, it also moves the draught forward, but

the reduction in power in the upper part of the sail reduces heeling, the amount of weather helm and of course the amount of leeway.

There is a great RYA DVD simply called *Speed*, by Adam Bowers, which explains the

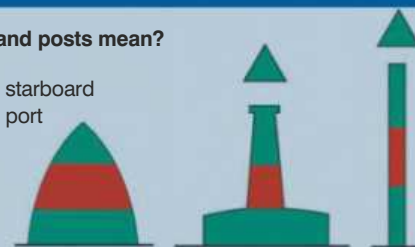
cunningham in a wonderful way along with other elements of rig control. I would recommend it to anyone who wants to get more from their sails.

Alistair Skinner
By email

PBO PUZZLE 196

What do these buoys and posts mean?

- A. Preferred channel to starboard
- B. Preferred channel to port



■ Find the solution at the bottom of page 98



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Dave Selby

Mad about the boat

Dave Selby is the proud owner of a 5.48m (18ft) Sailfish, which he keeps on a swinging mooring on the picturesque Blackwater estuary in Essex

Walking off with a prize

Despite subscribing to a leisurely sailing ethos, Dave finds himself accepting a sailing prize. Which had been won by someone else



'No, he's not first in this race, he's just finishing yesterday's...'

This is the ultimate PBO tip-top top-tip racing tip: if it's trophies you're after you can get as much dented pewter as you like for a quid a pop at any decent boat jumble or car boot sale. All you have to do is empty the ashes, plonk the tin-ware on your sideboard and bask in the dimly reflected glory of your tarnished achievements.

That's how I normally approach racing, but something rather odd just happened. I just bagged an actual trophy. That's pretty remarkable, for if racing is in the blood I've got seven pints of Horlicks in mine, with a dash of laudanum. These are not the genes of your average Ben Ainslie type. Basically, I go sailing to slow down and chill out. My view is that the longer it takes you to get there, the better. Indeed, if I was in a hurry I'd probably walk. My role model here is Sir Robin Knox-Johnston, who took *Suhaili* round the world at 3½mph – which is actually quite brisk for a gentle stroll.

Yet nevertheless, once a year, my lust for glory rises to the surface for the Maldon Town Regatta. It's well known among the Sailfish fraternity that my Sailfish is slower than all the rest – no one's yet explained it to my satisfaction – so this year, as there were three Sailfishes entered, and there are only three prizes in the Sailfish class, I decided to sail on a

60-year-old classic wooden boat.

As the Sailfish trio skipped off to the horizon in a tight formation, like a crack aerobatic display team, we lumbered along being overtaken by beautiful varnished yachts. Most were considerably larger, so it bothered us little. Some were a similar size, but that's one of the great things about old wooden boats. Even with ones that are dimensionally comparable, the endless permutations of time, age, rig, build, layout, ballast, sail plan, set-up, wood-burning stoves, oil lamps, bilge and utter bilge mean there's a fund of excuses. Because of that, most wooden-boat sailors are convinced they're outperforming their boat.

If racing is in the blood I've got seven pints of Horlicks in mine, with a dash of laudanum

You can't get away with that in a Sailfish. So, as boats continued to overtake us we wallowed in our pleasant, unshakeable delusions of adequacy and the courage of our assumptions. We were even rather encouraged to smugness by the fact we were keeping pace with a larger wooden gaffer owned by an eminent yotting journalist, until, with a 'what can you do?' shrug of the shoulders, he thumbed at his wake and explained: 'three-bladed prop'. What a drag, and we thought we'd been doing OK, when in reality he was outperforming his boat even more than we were. I knew the

guy was an expert.

The final reality check came when the only other surviving example of our boat in the entire world, a 23½ft Bermudan-rigged Blackwater sloop, breezed by us as if we were at anchor. What's more, it only had the owner on board. That's when it twigged. Basically, my presence on board makes boats go slower. I know that.

You'll kind of get the picture if I just tell you that by the time we arrived at the Osea Island finish, the Sailfish trio were just rising from their naps after three-course roast dinners. We, on the other hand, just had time to drop anchor, relax for three-and-a-half seconds, then swiftly raise it for the start of the second race, the Parade of Sail into Maldon. In our case, this was a pretty routine Charade of Fail. None of this disappointed me. It's what I expect when I'm on board.

Yet, for all that, whenever prizes are given out I can't help thinking I might bag a trophy. And I did. It wasn't the pumpkin prize, which went to a 10.4kg whopper. It wasn't the rubber duck race. It wasn't even the hotly-contested seamanship trophy, which normally goes to someone who's cocked up, then heroically and dramatically retrieves the situation: I've only

ever managed the first bit of that. In fact, I don't actually know what my prize was for.

Like any decent sailing event, the Maldon Town Regatta has more trophies than the summer Olympics, and at the prize-giving the top sailors turn up with wheelbarrows to cart off their silverware. Meanwhile, all I was filling up with was uncontrollable envy. That was until the compère awarded a trophy to an absentee winner and asked for someone to take it on their behalf. I seized the moment, walked forward, shook hands, grabbed the trophy and posed for a photo which never appeared in the local paper. I even got a faint ripple of applause.

But it didn't stop there. I spent the evening showing off my fraudulent trophy in the Queen's Head, while the trophy-less eminent yotting journalist shrugged 'three-bladed prop' late into the night. The wonderful, colourful pageant of the Maldon Town Regatta on a balmy September day makes everyone feel like a winner. It's an education too. Next year, if I'm on a classic I'm pretty certain it'll have a 'four-bladed prop'!

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Sam Llewellyn

Flotsam and jetsam

Sam Llewellyn is editor of *The Marine Quarterly*, www.marinequarterly.com, and author of nautical thrillers. Three years ago he bought a Corribee on eBay

An object lesson in obsequiousness

What do you know? Even 'consumer-facing brands' aren't averse to performing a *volte-face* if the row of zeroes happens to be at the wrong end of your money

I got a letter a while ago. It was typed on expensive paper. 'Dear sir,' it said (and I quote). 'We are pleased to announce the launch of a consumer-facing brand to help high net worth individuals such as yacht enthusiasts whose tax affairs are being challenged by HM Revenue & Customs.'

Well, well, I thought, replacing the Oxford Dictionary of the Higher Bollix in its rack. How extremely considerate and public-spirited to be facing consumers rather than gazing moodily out to sea and wishing they would go away. And I was about to throw the thing in the gash when a thought struck me. The rig of my Corribee is tuned to harp-like perfection. Her sails have been cut with the aching beauty of a shearwater's wings. Her accommodation, though it has about the same volume as a smallish estate car, is optimised for easy wine retrieval. So why, I thought, should the financial

arrangements under which she is owned not be similarly efficient? Particularly if the person who wrote me that letter will (if I understand his strangled prose) provide a safety net should the taxman take an undue interest?

The thought is parent to the deed. I took advice and hopped on to an aeroplane. In the British Virgin Islands I had a meeting with a little old lady who lived in a small white

house with a corrugated iron roof and 381 brass plates on the front doorpost. She agreed to sign any paper I put in front of her and never to divulge any information of any kind. Pausing only to set up a company owned by the BVI company in Jersey and a

company owned by the Jersey company in the Isle of Man, I then consulted Gavin Chance, a slightly alcoholic broker.

This pie-eyed operator offered me an unrivalled opportunity to charter my yacht back to myself via a British subsidiary of the IOM company, which would enable me to charge the charter fees against tax and reclaim VAT on everything

I bought for the boat, including the beer (though Mr Chance mentioned that I was entering a world in which, on the whole, Bollinger was the preferred bevvy). When I grew tired of the hurly-burly of the chartering life, said Chance, all I had to do was get my crew to sail the boat to Malta and pay VAT there at 18%

on 30% of the sum for which my BVI company was prepared to sell the boat to me as a private individual, which would be peanuts, and would I mind if he had a bit more whisky?

I poured with an unstinting hand. All I needed to do now was to start a bank to lend myself the money to pay for the companies and buy

the boat in the first place, and I would be away. Though by the sound of it we would have to rearrange the accommodation slightly to make room for filing cabinets and a boardroom. And perhaps it would also be worth running these new efficient arrangements past the taxman.

So I wrote to the obliging person who had sent me the customer-facing letter I mentioned at the beginning, pointing out that while meeting trouble halfway was not a good life plan, the motto of the Sea

Scouts was Be Prepared, and what did he think of the scheme? The first reply was a distant and rather disgusting bubbling noise, which on closer analysis I recognised as the sound of someone salivating. A few minutes later I got a follow-up call from a voice like the warm Vaseline I use to protect the Corribee's deck plugs against water.

'May I call you sir?' said the voice.

'Go right ahead,' I said.

'I appreciate that we are dealing with a person of exceptional net worth, sir, as so many yacht owners are, sir,' said the voice. 'A few preliminary questions, sir, if I may humbly make a request so bold?'

'Shoot,' I said.

'Who is the intended builder of this yacht?'

'It's a Corribee,' I said.

'From whose yard?'

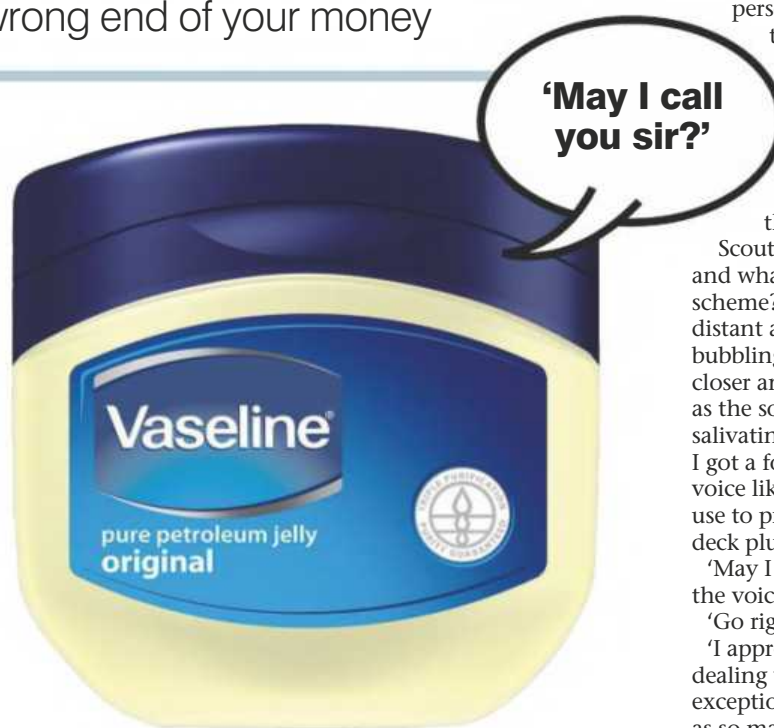
'A farmyard somewhere in Wiltshire,' I said. 'I got it on eBay.'

The Vaseline showed signs of turning to carborundum. 'eBay?'

'Nine hundred and fifteen quid I paid for that boat,' I said. 'And - Hello?'

Beeeeeee, said the phone.

Tch, I thought, shaking the head. Sometimes I wonder whether the people who write those consumer-facing letters truly understand the technicalities of yacht ownership.



I got a follow-up call from a voice like the warm Vaseline I use to protect the deck plugs

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Andrew Simpson

Monthly musings

Yacht surveyor and designer Andrew Simpson cruises with his wife Chele in his own-design 11.9m (39ft) yacht *Shindig*. Read his blog at www.offshore-sailor.com

No sacrifice too great

Andrew issues a salute to the sacrificial strips that stoically take all the punishment a headsail can be expected to endure in the Med

It seems a lifetime ago, but is probably only a couple of decades: Chele and I were crewing on a 47ft cutter in a classic boat rally in Mallorca.

With a 20-odd mile triangular race around Palma Bay scheduled, the fleet gathered at the start. The conditions were very light. Indeed, in common with most of the other entrants, we had motored out that morning to a position fairly close to the committee boat, there to languish motionless on an almost glassy sea.

After some thought, the owner (who I will call George to protect the innocent) declared that, in view of the general absence of any wind, we should deploy his lightest-weight headsail – rarely used and stowed deep beneath a selection of other bagged sails in the forward cabin.

Liberated by some unexpectedly strenuous excavations, this was duly heaved on deck, hanked onto the forestay and finally hoisted into the air.

At this point I should confess that, once the whole sail was there to be seen in all its glory, it did cross my mind that in terms of its general condition, it bore some resemblance to the Turin Shroud. The fabric was heavily stained, much of the stitching was worn, a few seams had actually opened and the fabric was weathered to the

point where I thought even a half-hearted sneeze might have blown it to bits. Nonetheless, I must acknowledge that it did serve over the first few miles. But once the calm gave way to a strengthening afternoon breeze – a regular occurrence in Mediterranean summers – even George was starting to look nervous.

A vote was taken (there were only three of us on board) and compassion prevailed. The unanimous decision was that the sail had suffered enough. So with a gentleness befitting its age, it was lowered as gently as possible and returned to the forward cabin to snooze in safety until possibly called upon again.

Just a few weeks ago I was thinking about that venerable sail while stripping the roller-reefed headsail off *Shindig*. With the boat ashore

In terms of its general condition, the sail bore some resemblance to the Turin Shroud

and the hurricane season looming, reducing unnecessary windage is an important task in the Caribbean. Anyway, it was getting on for three years since all of the headsail was at deck level, and I was a little anxious at what I might find. For *Shindig's* headsail is as old as the boat – that's to say it was made in 2001, with the acrylic canvas sacrificial strip being fitted at that time. This means that it has spent the best part of 14 years rolled around the forestay, exposed to the unkind



'I thought about that venerable sail while stripping the headsail off *Shindig*'

embraces of the elements; or at least partially exposed, thanks to the sacrificial strip which has taken most of the punishment.

For those unfamiliar with these heroes of the sailing firmament, let me explain. Whereas woven polyester sailcloth is quite susceptible to the ravages of sunlight (most particularly the ultraviolet end of the spectrum), acrylic canvas is comparatively resistant.

The more durable properties of acrylic canvas make it an ideal material from which to make the sail covers that will protect the relatively wimpish polyesters. Acrylic is also softer than polyester, which means when the two rub together, the former is the one that suffers most. With headsails, the usual ploy is to attach strips of acrylic canvas along the foot and leech of the sail. As you wind the sail up around its roller, the 'sac-strip' overlaps with each roll to shut out the light.

Valuable protection these sacrificial strips certainly bring,

but in doing so they take a brutal hammering themselves. *Shindig's* has been repaired repeatedly – by my hand with a palm, needle and thread, and more comprehensively by professionals in Menorca in 2011. Our original plan was to replace the strips entirely after quitting the Med in 2014 but, on the grounds that the sail would be set pretty much the whole time, we eventually decided to leave it until after the Atlantic crossing.

For us the news was reassuring. With the sail at ground level and the borrowing of a hand trolley, it was a simple matter to trundle it round to local sailmakers Turbulence no more than a couple of hundred yards away. There it was spread out completely, sacrificial strip uppermost, and assessed for whatever damage there might be.

Fortunately, the news was good. A few minor repairs, brand-new sacrificial strips and a few more years of service from the sail. I hope.



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Jeanneau Rush 30: a fast, low-cost cruiser available from as little as £8,000 second-hand



Sailing Scenes

28-30ft cruisers: an overseas overview

Peter K Poland revisits some of the most noteworthy foreign-built 28-30ft cruisers which flooded the UK market from the 1970s onwards

ABOUT THE AUTHOR

Peter K Poland crossed the Atlantic in a 7.6m (25ft) Wind Elf in 1968 and later spent 30 years as co-owner of Hunter Boats. He is now a freelance journalist.



While British builders of 28-30ft cruisers made hay in the 1960s and 1970s and the aisles of Earls Court swarmed with sailors buying yachts, new threats to the UK market dominance of Westerly, Thames Marine, Moody et al were hatching across the Channel. An invasion was imminent, one that would eventually obliterate the majority of well-known British yacht builders. During the calm before the



Sailing Scenes

The Dutch-built Contest 29 is available second-hand from around £8,000

storm, the number of imports reaching these shores was insignificant. Most foreign offerings to make it to the UK were conventional rather than trendsetting. The 1964 Dutch-built

Contest 29 is a typical example. An attractive counter stern, doghouse and modest beam (8ft 3in) have the look of a traditional wooden cruiser adapted to GRP production. Its DLR of 274 and

ballast ratio of 39% put it firmly in the moderate camp. Then in the mid-1970s, Contest went more 'modern' with boats like its sleek fin-and-skeg 30 which has a wider beam (9ft) and more spacious interior – albeit still with an amidships heads. Unlike most British builders of that era, Contest is still going strong, now majoring in far bigger yachts.

Tord Sundén (of Folkboat fame) designed another attractive 1960s cruiser, the King's Cruiser 29. Originally a wooden long-keeler, it was modified and adapted to GRP construction, and well over 200 were produced. With a retroussé transom, stylish roof and rakish fin and skeg underbody, it has a hint of the S&S She 31 about it, and thanks to a 242 DLR, 45% ballast ratio and moderate weight of 6,815lb, it performs well. One owner wrote: 'Good, solid boat. The only real problem I have noted is compression stress around the deck-stepped mast (GRP version). And I'm beginning to wonder about the attachment points for the shrouds, which are mounted in the middle of the sidedecks without any visible reinforcement other than a slight thickening of the deck. I also have some osmosis, but the hull is about 2cm thick so I'm pretending I haven't seen it.' How many other owners of old boats echo this sentiment?

'She's a good, strong boat, built by Fiskars AB of Finland, to make stupid mistakes in; and it should last for a few years yet.' It's a good-looking boat that sails well.

The sweet spot

After Dufour launched the Arpège in the 1960s, Bénéteau got British importers excited in the '70s. It had already done some business over here with its long-keeled Evasion

32 (and later Evasion 28 and 29), but the racier **First 30** hit the sweet spot in 1976. Designer André Mauric made his name with the Super Challenger and Super Arlequin 30ft fin-keel cruiser-racers in the '60s, but despite great success in France neither model caught on over here. The First 30, however, was a different story. Developed from Mauric's Cup-winning Half Tonner *Impensable*, it added family accommodation to potent performance and helped open UK floodgates to French imports.

Bénéteau got British importers excited in the '70s with the First 30

The First 30 typified the move to mass-produced, flat-bottomed and moderate-to-light-displacement yachts with fin keels bolted directly to the hull skin, so it's important to look at displacement/length ratios when comparing such boats to heavier, older designs. DLR shows the relationship between waterline length and weight, and of all the ratios that indicate a boat's seagoing character and behaviour, this is perhaps the most important. A light cruiser-racer will have a DLR of 150-200; a light cruiser 200-250; an average cruiser 250-300; a heavy cruiser 300-350; and very heavy cruisers 350 plus.

A low DLR suggests livelier motion and potent performance, while a high one gives a comfortable ride and sedate sailing. Considered together with the water plane (the horizontal plane on the waterline), you can gain a good insight into a boat's motion. Broadly speaking, heavier boats (more weight helps dampen motion) that have smaller water planes will have a more comfortable motion at sea. Lighter boats with more water plane will have a quicker motion, because

there is more area for waves to push up against and less weight to 'resist' the 'pushing'.

So where does the game-changing IOR Half Ton-derived First 30 fit in? Its DLR of 206 is in the 'light division', a ballast ratio of 49% should give stability while a SA/displacement of 15.85 spells good light-weather performance. Its weight of 7,606lb keeps build costs down while a beam of 9ft 4in gives ample space for traditional family-friendly accommodation down below.

A total of 965 were built, so this type of boat was an instant hit. Although small compared to today's 30-footers, it offered more space than most contemporary competitors, was faster and had sharper handling.

The conventional layout comprised a double V-berth forward, large heads amidships, a saloon with two full-length settee berths, optional pilot berths and a table. An aft galley, chart table and quarter berth completed the picture. To this day, it makes a

quick and commodious boat, albeit one that may need a degree of refurbishment. If the foam-backed vinyl hull liner is original, it could well need replacing – and a thorough survey is advisable.

Fun aplenty

From the 1980s onwards, Bénéteau's First range grew apace. The 30E (DLR 160, more of a racer), 305 cruiser-racer (DLR 192), 28 (DLR 185), 29 (DLR 174 and an early 'aft cabin + WC' interior), 285 (DLR 192) and 300 (DLR 122) are all worth considering, but check the lifting-keel mechanisms on variable-draught models. These offer benefits, but only if the complex and custom-made gear still works well. Spare parts are usually available through dealers, but can take a while to source and cost a lot.

The later **First 27.7** (29ft OA) is an interesting option. This Finot design is at the sporty extreme of the Bénéteau spectrum (DLR 122) and offers fun aplenty.

Chris Stevens (of Waterline Media) told me: 'I bought the



Sailing Scenes

Bénéteau First 27.7: available second-hand from around £25,000



Sailing Scenes

Bénéteau First 30: from around £12,000 second-hand



Sailing Scenes

Bénéteau Océanis 320: second-hand prices start at around £20,000



Sailing Scenes

Bénéteau Océanis 281: from around £20,000 second-hand



Sailing Scenes

Dufour 29: available from around £12,000 second-hand



Sailing Scenes

Jeanneau Sun Light 30: from £14,500 second-hand

boat after trials on lifting- and fixed-keel versions. I much preferred the fixed keel. It sails well in light airs but is fussy in heavy air/seas, being sensitive to heel angle: it's fat and beamy aft. I reef early, 18 knots apparent, to ease the helm.

'It has great accommodation for a small boat – a vast improvement over the lift-keel interior. It's light and airy, has reasonable stowage and just enough timber below to not feel like a Tupperware box. It's excellent for short-handed sailing.' All in all then, a typical modern lightweight flyer.

You'll also find 28- to 30-footers in the more sedate Océanis cruiser marque. One of the earlier models, the 1987 30ft 3in **Océanis 320** designed by Briand, set the stall for this range that became Bénéteau's top seller, leaving the sportier Firsts in its

wake. These all-purpose boats have proved popular with private owners and charterers alike, combining spacious accommodation with above-average performance.

The Océanis 320 has a DLR of 185, ballast ratio of 30% (bulbed keel) and SA/displacement ratio of 20 so, surprisingly, its ratios are 'lighter' than the 1976 First 30 but more conservative than later and livelier Firsts. By contrast, Bénéteau's earlier long-keel cruiser – the 1973 Evasion 32 (31ft 10in LOA) – boasted a mighty DLR of 411. Times were changing.

The 1995 **Océanis 281** illustrates the move towards wider and lighter cruisers with its DLR of 174, SA/disp ratio of 16.79 and ballast ratio of 29%. A hefty bulb on the keel base follows the now

common practice of lowering the centre of gravity as much as possible to compensate for a modest ballast ratio. And of course this lowers overall weight, which in turn reduces cost and enables a smaller, lighter rig to be carried... which lowers costs again... and so it goes on.

It's the modern way, and explains why pricier and heavier cruisers like the Nicholson 31 will never be produced in numbers again.

Plenty of poke

Predictably, Jeanneau's 28- to 30-footers ran parallel to Bénéteau's. While early successes such as the Folie Douce (28ft 6in OA) and Brin de Folie were great boats and sold in huge numbers on the Continent in the early '70s, few came to the UK. But all changed in the late '70s when the IOR-influenced and Half Ton-derived Ron Holland **Rush 30** appeared. With its broad beam

and Sun Way. All are closely related and have much to offer. A DLR of 189 and ballast ratio of 43.5% put it firmly in the light-to-moderate category, while an 18 SA/disp promises good performance. The stern is wide, but not excessively, so there's less skittishness downwind than on older IOR 'orange pips'. From a build point of view, Jeanneau's robust plywood 'box girder' system incorporating bunks etc makes the hull skin and keel bolts more accessible than multiple inner mouldings. These elegant boats are well worth a look.

The Jeanneau Owners Association put me on to USA-based Marty Bower, who summed up his 1985 Arcadia's appeal. 'My wife fell in love with the roomy, airy feeling of the main cabin. We also liked the exterior lines of the boat,' said Marty.

'Overall she has lived up to expectations. She sails reasonably well in light airs. In 5-15 knots she takes off with a main and 155%

headsail hitting 6+ knots upwind, 7+ downwind. In 15-25 knots, it's a main and 140% or 110%.

'In 25-40 knots, it's a single to double reef and 110% jib. 40+ knots have been rare; down to double-reefed main and a storm jib, or 110% alone.

'We've hit 11 knots downwind in 35-40 knots. Short-handling is pretty good to easy.'

There are some shortcomings, says Marty, but they're not major. 'One issue is the mini forestay: it's hard to heave a genoa over it when tacking.

'Interior problems include the foam-backed vinyl liner falling off and needing replacing. This seems pretty common on

All changed in the late '70s when Ron Holland's Rush 30 appeared

(10ft 4in) and fine ends, it was Jeanneau's answer to the First 30. A DLR of 180 and ballast ratio of 41.6% gave it plenty of poke, even if its 'orange pip' shape could make it a handful under a spread of canvas downwind. Plus ça change. It was typical of its era, sold well and still makes a good, fast, low-cost cruiser. Assuming similar condition and price, it would pip the First 30 on my shopping list.

The 'new look' with aft heads and double cabin appeared on Jeanneau's Joubert-Nivelt 1982 Attalia (30ft 6in OA) closely followed by the popular Tony Castro-designed Arcadia (29ft 6in) and its later sisters the Sun Dream

Jeanneaus and Bénétéaus from the mid-80s.'

Marty adds that the fuel tank is small, that he prefers his tiller to the wheel option, that like any cruiser-racer with flat hull sections ahead of the keel she pounds a bit in 2-5ft head seas, and that she is quick, winning local races.

Overall, then, it's a sound family yacht that fulfils the needs of a competitive sailor, and his wife likes it too. Perhaps an ideal compromise?

'Great sporty looks'

The 1986 Andrieu-designed **Sun Light 30** offers a similar but slightly larger package. A broadish stern, DLR of 189, 38.7% ballast ratio and 19.5 SA/disp will ensure much the same handling and performance. The later Sun Odyssey 31 and sportier Sun Fast 31 (30ft 6in OA) developments are younger and equally attractive.

As on many Jeanneaus of this era, variable-draught versions were often available, but as with other brands, make sure the lifting mechanism is in good order.

Two other attractive 28-30 footers appeared in the 2000s: the Jacques Fauroux-designed Sun Odyssey 29.2 (DLR 168, ballast ratio 36.7%) and Marc Lombard's Sun Odyssey 30i (29ft 6in LOA, DLR 195, ballast ratio 24% with large bulb). Both feature the now fashionable high topsides that improve internal space.

Patryk Kosciuk owns a 29.2, and told me he bought her because she's a 'perfect family size and has great sporty looks'.

'She's a fast boat – we've got 8.5 knots out of her – and there's loads of space below. She feels like a bigger boat and is great for Force 3-4. After Force 5 you need to reef as she's tippy in heavy

weather because she's very light.'

Patryk's 29.2 has a 1.43m fin keel, which he says has advantages when offshore and is faster than the lift-keel version.

With a novice crew he did the Round the Island Race twice, achieving good results and keeping pace with 35-footers. As regards cruising, he said: 'We have visited the Channel Islands with five adults and two children: there was plenty of space and no one was in the way.'

For short-handed sailing he fitted single-line reefing, a new mainsail with reefing blocks and an autopilot, adding: 'She's pretty easy to sail single-handed. You just need to watch out when its blowing over Force 5 because

Michel Dufour brought interesting 28-30ft cruisers to the party

she's very responsive to wind.'

So, all in all the 29.2 is a typical modern cruiser with its typical pros and cons. Patryk concludes: 'A very nice boat to sail, perfect for small families, and beamy for her size. Would I buy her again? Yes, anytime'.

Robust and spacious

Michel Dufour also brought interesting 28-30ft cruisers to the party in the 1970s and '80s. The oft-underrated 1973 **Dufour 31** (LOA 30ft 10in) is a robust and spacious fin-and-skeg cruiser, making a popular liveaboard budget blue-water cruiser. A DLR of 352 and ballast ratio of 38.5% provide power and stability. An unusual clipper bow, flat sheer and long, low roof give it character, while the space below (10ft 6in beam) is exceptional and practical for its era. Around 900 were built, so you should find a good example.

The 1975 **Dufour 29** (29ft 4in)

is similar but smaller. A DLR of 205, SA/disp ratio of 15.6 and weight of 7,250lb make it sportier in character, yet it's still a versatile cruiser.

While some sailors seek out an example in tip-top condition, others prefer to buy a neglected bargain then put in the work. Mike Winter, who took part in the Jester race to Baltimore, told me: 'I purchased the Dufour 29 in 2010 for £7,500. She was in a bit of a mess. Since then I've fully refurbished her with new sails, rigging, engine, paint and deck covering, sprayhood, cockpit tent, stack pack and all internal soft cushioning. I planned to live on her permanently, which I've done since 2010, but with a mind to completing a Jester.'

Mike added: 'The boat handles superbly in 10-25 knots of wind and will sail at 30° at about 7 knots in these conditions. The first reef goes in at 15 knots. In heavy weather you have to slow down or she slams into the waves, but it is extremely comfortable and gives a real sense of safety. I have just returned from Baltimore and beat into 35 knots of wind to get into

Plymouth. I wouldn't change her. She's easy to handle short-handed and is a great boat for socialising. And with a couple of friends, she's a good coastal cruiser.'

If you prefer a newer Dufour, the 1998 J&J-designed and incongruously named Classic 30 is bang up to date, with aft heads and double cabin. A DLR of 167, 34.3% ballast ratio (with bulb fin keel) and high SA/disp ratio of 18.45 all point to a lively modern boat with sharp performance. It has a pleasingly crisp appearance and its ratios are in marked contrast to the heavier 29, designed by Michel Dufour about 15 years earlier.

If you prefer slightly 'rarer' French yachts, the Jouet 920 (1979), Berret-designed 820 (29ft 5in, 1980) and interesting 940MS (30ft 10in, a 1983 performance wheelhouse cruiser) are worth a look, the latter being a possible alternative to the less sprightly Southerly 28. The 29ft 8in Gib'Sea 90 Plus is a fast cruiser-racer, and the late-lamented Belgian builder Etap was also busy in the 28-30ft slot, offering the bonus of 'unsinkability'.



Sailing Scenes

'Unsinkable' Etap 30: second-hand examples from around £19,000



Sailing Scenes

Dufour 31: available second-hand from around £11,500



Sailing Scenes

Hallberg-Rassy Monsun 31: available second-hand from £15,000 and upwards



Sailing Scenes



Sailing Scenes

Maxi 84: ready-to-sail second-hand examples from £12,500

Bavaria 30: plenty of second-hand choice starting from around £20,000



Sailing Scenes

Elan 295: second-hand examples start at around £20,000

The de Ridder-designed **Etap 30** (1985) is a popular fin-keeler with moderate-to-sporty figures of DLR 224, ballast ratio 38% and SA/disp 16.25. It didn't manage to fit an aft heads and double cabin, but the accommodation is well finished and attractive. All in all, a desirable yacht. The equally successful 32i from 1992 was part-designed by the great Phillipe Harlé – boasting his trademark short roof – and offers the 'modern' layout, a fin-keeler with many attractions.

Slick precision

Further north, the Scandinavians also built several 28-30 footers. Most are covered in recent PBO issues. Hallberg-Rassy's 1974 **Monsun 31** long-keeler (over 900 built) cruises the world to this day; as does the 1979 fin-and-skeg HR 312 (700 built). The equally seaworthy 1982 HR29 (571 built) offers the same qualities in a smaller package.

If you prefer something less expensive and slightly sportier, the Maxi range sold well (see PBO Summer 2015). The Maxi 87 (1975, 28ft 6in), **Maxi 84** (1976, 28ft) and 100 (1982, 30ft 10in) are all Petterson-designed, practical rather than plush, and sail well.

The later 909 (1986, 29ft 6in),

With slick production techniques and budget prices Bavaria took off

however, was built in smaller numbers and with a superior finish, so it costs more: but it's worth every penny if you want a classy and stiff 30-footer with a modern layout and high performance.

Fancy a cruiser built with slick precision? Try a Dehler. Although few early models (1974 Optima 92 and 1986 Duetta 86) made it to the UK, the fast and elegant Cees van Tongeren-designed 31 (1984, 30ft 10in) sold fast and is one of the most desirable yachts of its type around. The more recent Judel/Vroljik 29 (1998, 28ft 9in) is less pretty and narrower, but no

less a performer. And it's still in production (see The Dehler story, PBO November-December 2013). If you prefer a classy, modern Cees van Tongeren design, don't forget the Dutch-built Winner 9 (2013, 29ft 6in).

Also of a sporty bent, the Slovenian-built and Rob Humphreys-designed **Elan 295** and 31 will satisfy sailors looking for high speeds allied to modern but functional accommodation (see the Rob Humphreys feature in PBO August-September 2014). And the first Hanse (the 291) still provides a lot of pretty boat for an attractive price (see The Hanse story, PBO June 2015).

Equally competitively priced, the Bavaria range is a top seller to private owners and charter companies. Established in 1978, its early products made little impact in the UK: then a new management team joined forces with J&J Design and majored on slick high-speed production techniques and budget prices. Bavaria took off.

The smallest J&J model – the **Bavaria 30** – is typical of the breed.

A DLR of 207, ballast ratio of 24% (with a CG-lowering bulb) and SA/disp of 14.58 all point to average performance. But the voluminous hull (10ft 9in beam) and practical interior are plus points. The Bavaria Owners Association put me on to Guy Martin, who said: 'We bought our Bavaria 30 four-and-a-half years ago. We liked the interior woodwork; it's solid and not too dark, no laminates or veneers. She has a solid feel about her, and performance is good enough for a cruiser. We have in-mast furling, which I wouldn't recommend from

a performance standpoint.

'Unfurl the headsail and she sails at a respectable 5/6 knots. Her sweet spot is 8-16 knots of wind – she's not much good in anything below 5 knots. In heavy weather she bobs around a bit, but the cockpit always remains dry. In all, a very well balanced boat. We have a shallow-draught tandem keel so she doesn't point so well. I sail single- or short-handed all the time and she's perfect for this.

'Niggles: all Bavaria 30s I've seen have a slight list to starboard. I fixed this by adding some lead ballast on the port side. Reliability and build quality are good – no complaints. For one or two people the yacht is very comfortable for cruising. Two adults and two children, fine. Any more adults and it gets a little tight. I would like to change up to a larger yacht, but am loath to do so as I've spent so much money upgrading. I bumped into the previous owner who did just that and regretted selling her, so maybe I'll stick with her!'

If you're after a brand-new 28- to 30-footer, your choice gets smaller every year: most manufacturers' 'starter boats' are now around 33ft, Bavaria included, and newer models tend to be lighter.

So if you want more weight, it's back to the oldies. It has been impossible to feature every 28-30ft cruiser, but if you know the sort of sailing you want to do, there are plenty of older boats to fit the bill and budget. Study class association websites, consult a surveyor, and go for it!



NEXT MONTH

The Bavaria story: sensible boats at unbeatable prices

Charging two battery banks on your boat

Ben Meakins weighs up four viable options for charging two battery banks on board, and demonstrates how to set about the installation of a VSR

Most boats these days have at least two batteries on board – and for good reason. That way, the theory goes, you can run as many lights, instruments, stereos and fridges for as long as you like and still be able to start the engine next morning. But to do that requires some sort of battery switching system.

Things have come a long way since the humble battery switch. Here are four options to upgrade how you switch between batteries.

1. Battery switch

The traditional way to switch between batteries is with a switch that allows you to select one or both batteries.

This has worked well for decades,

but relies upon you remembering to switch it to one battery to start the engine and back to the house battery when the engine goes off. The facility to combine the batteries on 'both' is useful, but runs the risk of sailors forgetting to switch it to the house battery later – and waking up to discover two flat batteries.

PROS: Cheap and simple.

CONS: Relies on the user remembering to switch it over and select the right battery.

2. Split-charge diode

Split-charge diodes have been around since the 1960s. Put simply, a diode allows current to flow in only one direction. Most of these types of

splitters contain two separate diodes which, when connected to an alternator, split the charge in two and deliver it to two separate batteries which are totally isolated from each other.

This sounds like a great solution – it's a 'fit and forget' way of charging two or more battery banks independently – but it's not entirely perfect. Diodes by their nature create a volt drop of up to 1V as the current passes through, which means that the batteries won't receive the alternator's full charge – and thus, will never become fully charged by the engine if you use a machine-sensed alternator. You can get around the problem by using a battery-sensed alternator, which will do a much more efficient job and enable the batteries to charge fully.

It's also advisable to fit a switch so you can combine the batteries in an emergency – they will

otherwise be completely separated and you won't be able to start the engine using the house battery.

PROS: A 'fit and forget' way to isolate and charge two battery banks.

CONS: Risk of batteries not being fully charged if you use a machine-sensed alternator.

3. Twin alternators

Some people fit an additional alternator to their engine. This has its advantages – it provides a totally independent means of charging the start battery, as well as providing a level of built-in redundancy in case a battery or alternator is to fail.

PBO's editor, David Pugh,



Twin alternators provide an independent means of charging the start battery



decided to fit an extra 10A alternator to his 13hp Lombardini engine (as pictured on page 27). This totally separates the start and house batteries and their circuits – but they can be combined if one battery was to fail using a switch with the facility to combine batteries. This also has the advantage that if one alternator was to fail, the batteries can be combined and one alternator used to charge both batteries. Better still, you then have a dedicated alternator which will deliver the right amount of charge to each battery.

David's justification runs as follows: 'Our engine is slightly overpowered for the boat, so we had plenty of excess power available to run another small

alternator. It gives us two separate circuits and should give us a constantly-charged, dedicated engine start battery. As such we can use a smaller, motorcycle-sized battery, reducing weight on board.'

PROS: Totally isolated battery banks, which means you can't discharge the start battery by accident.

CONS: The engine needs to be able to take another alternator, and powerful enough to take the extra load.

4. VSR

Voltage-sensitive relays (also known as ACRs or automatic charging relays) keep two battery banks isolated when not charging, but use a high-current relay to

connect them together when charge is available. When a charging voltage is detected on the start battery, some units will immediately combine the house and start batteries to charge both, while others will wait until a preset voltage is reached at the start battery before combining them. Once combined, if one battery is less charged than the other, it will take a greater share of the charge until they are equal.

When the engine is switched off and the voltage falls, the batteries are isolated once again. Some VSRs also include a 'low-voltage cut-out' which will prevent the VSR



from combining the batteries if either of them is at an unacceptably low charge level.

VSRs come into their own when a small inboard or outboard engine is used which has combined starter motor and alternator wires to the battery. In this case, a diode system will only let the current flow one way, whereas a VSR will allow both charging and starting with only one set of wiring.

PROS: Simple solution that takes human error out of the equation.

CONS: Should one battery be past its best or have a faulty cell, the other may not charge fully.

Installing a VSR on board

The elderly Vetus battery switch on my boat had become unreliable – especially the 'make before break' aspect of it, which had begun to lose connection as you moved the switch from one battery to another.

I originally looked for a replacement switch – if it ain't broke – but then began to think of updating the system. In the past few months I'd left the batteries on for a fortnight when leaving the boat, and having someone jump down the companionway to change the

batteries over when we wanted to start the engine was a pain.

I settled on a Blue Sea Systems mini ACR (automatic charge relay), which came packaged with a switch, called 'mini Add-a-Battery' for alternators of under 65A – mine is a 35A alternator.

The wiring looked quite straightforward, and the existing wires would hopefully just bolt straight on to the back of the switch. I'd need to make up new, fused ones for the ACR. The system has an optional 'start isolation' wire, which can be

connected to the start button.

This isolates the house batteries from any loads or spikes from the engine as it starts, and seemed a good idea for a few minutes' extra work.

With the system installed, all looked good – until I realised that the heater took its power from the back of the engine's power supply. This of course meant that the heater would now be drawing its current from the now isolated starting battery – not ideal. I ran a wire forward to the battery switch's accessories terminal – problem solved.



Here's how I wired it up step-by-step



1 This was the original Vetus battery switch, mounted on the side of the bunk seat that houses the boat's two batteries. It had become unreliable and so I decided to replace it with something more modern.



2 I removed the old battery switch and made up a painted plywood panel with holes cut out for the battery switch and ACR and mounted it on the side of the battery box.



3 Next, I wired up the battery switch. This has four terminals on the back: one for the accessories, to which I also connected the heater, and one for the house battery's positive cable. On the other comes the engine start/charge cable and the start battery's positive feed.



4 Next up came the ACR's wiring. This consisted of a wire to the positives of both house and start batteries. These should be of a cable size sufficient to withstand the full charge of the alternator as the batteries are linked, and should be fused – for my alternator these needed to be 60A, and I went for 16mm² cable for safety.



5 I used a pair of 60A midi fuses between the ACR and the batteries, using 16mm² cable with crimped ring terminals to make a safe and heavy-duty set-up for each one.

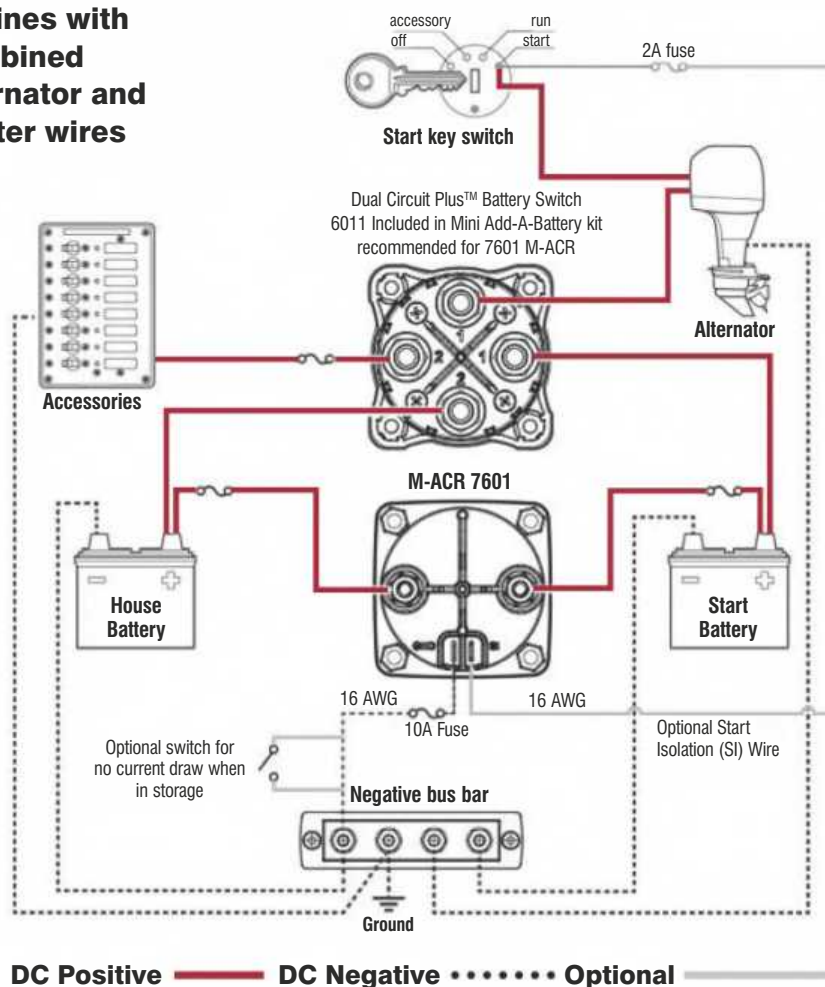


6 A ground wire went from the negative bus bar to a spade terminal on the back of the ACR via a 10A fuse. The other terminal was connected to the push-start button on the engine control panel, making sure that it was the terminal that is live only when cranking. This isolates the house battery loads from the engine to avoid voltage spikes and drops when starting the engine, should a high float voltage trick the ACR into combining the batteries when the engine isn't running.



7 And that's the wiring completed. With this, the switch and ACR are successfully installed. When the ACR detects a charge on either battery, it combines them after a two-minute delay, and when the charge stops, it isolates them.

Engines with combined alternator and starter wires



Checking the operation of the VSR

An LED indicator on the front of the ACR shows its status. You can check the operation of the unit with a multimeter. With the engine off, the house battery is 12.39V and the start battery 12.65.



House battery



Start battery



Engine off, batteries isolated

With the engine running, you can see that both batteries are charging at 14.3V. The boat's battery monitor shows that starting the engine does not affect the house batteries.

I'm really pleased with the new system – you can safely start the engine whenever you like without having to worry about switching the batteries over, and it's really reassuring to have the start battery ready for action.



Engine on, batteries combined

17 battery chargers



Emrhys Barrell examines chargers ranging from the most sophisticated units to a

ABOUT THE AUTHOR



Emrhys Barrell has worked in boatyards including Macwester, Groves & Guttridge and Palmer

Johnson, and built *Great Britain II* for Chay Blyth. He was technical editor of *Motor Boat & Yachting*, then set up *Motor Boats Monthly*, followed by *Luxury Yacht* and *Canal Boat & Inland Waterways*. He lives beside the Thames in Goring, south Oxfordshire, and is an expert in electric propulsion.

For many boat owners, our portable battery charger spends most of its life at the bottom of a damp locker, or at the back of a dusty shelf in the garage. It's only dragged out when the batteries go flat, to put in enough charge to get the engine started.

But now, in its modern multi-stage form, it can play a vital role in extending the life of all your onboard batteries.

Battery theory

To understand why, we need to remind ourselves once again of the principles of the lead-acid battery. In its simplest form, this consists of two plates – one made of lead, Pb, and the other of lead oxide, PbO₂. These are immersed in sulphuric acid, H₂SO₄. When

the tops of the plates are connected, a voltage of 2.1V is generated and a current flows. At the same time, the lead and lead oxide convert to lead sulphate, PbSO₄, and the acid to water, H₂O. When this conversion is complete, the current stops.

To recharge the battery, a higher voltage is applied in the opposite direction, the plates convert back to lead and lead oxide, and the water back to acid.

If six pairs of plates are connected in series, we get our familiar 12V battery. This has a voltage of 12.6-12.7V fully charged, which reduces to 11.6V fully discharged. To recharge this, we need to apply a reverse charge of at least 1V more, so the charger will need to start with a voltage of around 12.6V, which increases to 13.6V as the end of

charge approaches.

However, this will only put 75-80% of the charge back into the plates. To get the last 25% in, the voltage has to rise to at least 14.4-14.5V, but this is getting close to the voltage at which gassing takes place.

When a battery gasses, the sulphuric acid breaks down into its component hydrogen and oxygen, which rise to the top of the liquid and form an explosive mixture above the plates or in the engine compartment.

Many older chargers simply ignored this problem, with their voltages rising uncontrolled to 15V or 16V and your boat or garage filling with the familiar sharp smell of hydrogen, just waiting for a spark to ignite it.

Or, if you forgot to switch it off, you came back in a week to a dry



£30 eBay cheapie!

How we tested them

For our test we used four identical 105Ah leisure batteries. We discharged each of them down to 30% each time using a fixed current discharge tester, then connected up each battery in turn. We measured the resulting charging profile using data loggers on each unit, measuring current and

voltage for each phase over a full 24-hour cycle.

For practical reasons we were unable to test any claimed sulphation phases or long-term maintenance phases.

We recorded the time it took each unit to complete the bulk charge phase, how the bulk charge current related to the

unit's claimed output, and the maximum voltage they delivered during the absorption phase. We took chargers from all of the major manufacturers, and also went onto eBay and bought what purported to be an automatic charger, to see just what the bargain basement had to offer.



We tested the chargers using four identical Numax 105Ah leisure batteries discharged down to 30%

battery ready to explode.

With the advent of safety regulations, many chargers took the easy option by controlling the output to 13.6V, thus avoiding gassing, but never completely charging the battery. In a battery that is regularly never more than 80% charged, 20% of the plates will gradually sulphate, ie turn into a crystalline form of lead sulphate that will never convert back to lead. As this process continues, your battery quickly loses all of its capacity until it becomes useless and you have to buy a new one.

And don't think the alternator on your engine will solve this problem. Again, to avoid the risk of gassing it will never deliver more than 14.2V, and this is at its terminals. By the time the electricity has travelled down thin wires, poor connections and splitting diodes,

the voltage reaching the battery will rarely be above 13.6V or so, and so the sulphation process will continue in secret.

Multi-stage chargers

However, help is now at hand in the form of the modern multi-stage charger. Using electronics, these will charge the battery in carefully controlled phases, each one with preset current and voltage levels.

The number of stages and their functions will vary with the unit's sophistication and cost, but they should all reach 14.4-14.5V, at which point they will bring the battery close to 100% full and prevent sulphation taking place.

If you regularly hook them up to your batteries through the season, they will extend battery life by anything up to three or four years.

Not only that, they will also ensure that you have the full 100% capacity for much of their lifetime instead of a rapidly deteriorating figure.

Most of the chargers we tested can also be left permanently connected to your batteries to keep them in top condition, but it is very important to note that they must always be plugged into the mains when connected. If you switch the mains off, the batteries will gradually discharge through the charger. This may only be milliamps, but over a period of weeks it will drain the batteries and cause sulphation.

Sophisticated chargers may have up to seven or eight charge stages in all, but most will have a basic three: in the first stage the current is held constant, usually at the charger's rated maximum.

The battery's voltage gradually rises until it reaches 14.4-14.5V. This is called the bulk phase, and by the end of this the battery should have attained at least 80% of its nominal capacity.

The charger then enters the next phase, keeping the voltage constant while the final 20% is put in, with the charge current gradually falling. This is called the absorption phase.

When the current reaches a preset figure, the charger either switches off or moves into the final stage and the voltage drops to around 13.6V: the float phase.

After a preset time in this phase, the charger may switch off or it may continue indefinitely at the float voltage. If a load is applied to the battery in this phase, the voltage should rise to match this.



Battery chargers on test

Noco Genius G15000

PRICE: £185

Contact: www.manbat.co.uk

From the Manbat stable is the Noco Genius G15000, a very sophisticated unit with a whole host of features. It will charge 12V or 24V lead acid batteries, including normal, gel and AGM, plus advanced AGM (as used in cars with stop-start systems). It will also charge 12V lithium cells, but you are recommended to contact the battery manufacturer before doing so. It will administer a 5-minute higher jump-start charge to a completely flat battery, and will start from 2V or below. It also has a

13.6V 5A supply mode, which can be used to run equipment or save memories in electronics. It is an 8-stage unit, with an initial analysis phase that checks the battery, plus soft start and the usual bulk, absorption and float phases.

Repair mode delivers 16.5V and 1.5A to desulphate and de-stratify, although you are advised to disconnect the battery from the boat's circuits while this is operating. Each mode is chosen using a single press-button with an illuminated icon trail and LEDs to show the charging progress. Battery leads are 1.8m, with large insulated crocodile clips and an in-line fuse. It is a rugged unit, waterproof to

IP44.

On our test it only delivered a maximum 9.6A into one 105Ah battery, but when we queried this with the makers they said its electronics govern the current to what it considers the battery is best able to accept, and so adjust automatically to the size of the battery. We therefore hooked two of them together in parallel, making 210Ah, and the current went up to 14.6A. Clever. Maximum voltage was 14.5V, and battery charge 90%.



Numax 10A, 20A

PRICE: 10A £80, 20A £120

Contact: www.manbat.co.uk

Here's a similar pair of chargers which have been on the market for some years now under different brand names, and which have proved to be simple but reliable units.

They are basic 3-stage chargers, though the 20A model does have a slow start in the form of an initial 30-second phase at 50% current. It also starts with what is termed in the instruction leaflet a Pulse mode, which we presume is a desulphation phase. The 10A unit has a small LCD display that shows the state of charge of the battery in four steps from 25-100%. It also has a flashing 'charging' text, plus a fixed text that confusingly says



'equalise' during the absorption phase, then 'float' during the float phase.

Two LEDs also show the three stages.

The 20A model has an LED display which just shows the battery voltage, plus the same two LEDs. Both units reached a maximum 14.55V during absorption, then dropped to a 13.55V float. Their maximum currents were 9.9A and 19.7A respectively, with battery charges 87% and 88%. Both have 1.1m leads and partly-shielded clips.

Sterling 7A

PRICE: £50

Contact: www.sterling-power.com

Sterling concentrate mainly on fixed chargers but they always have a small unit in their range, offering good performance at a competitive price. Presently it is the 6A, but we tested their new 7A, with many more features, which is about to come on the market.

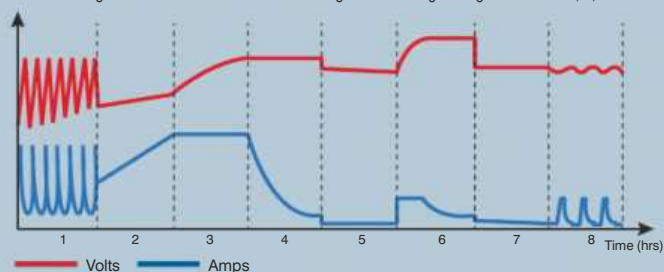
The new unit will charge 6V or 12V batteries, with six battery types: flooded, gel, AGM, advanced AGM, calcium and lithium. It has three basic stages – bulk, absorption and float – but if it detects the initial voltage is between 7.5V and 10.5V, it goes into pulse mode to rescue a dead battery. You can also choose a 15.5V desulphation mode at any time. The maximum current can be set to 3A, 5A or 7A.

In our test it delivered a maximum 14.4V, 7.0A and 13.8V float, charging the battery to 90%. Its cables are 1.7m with fully shielded clips.



Multi-stage charging

Different chargers will have some or all of these stages. Three-stage chargers will have 3, 4, and 7



The diagram above shows the full set of stages a battery charger may provide. They are:

1. **Desulphation.** This applies pulses of current to break down sulphation on the plates. The effectiveness of this is doubtful.
2. **Soft start.** The charger gradually ramps up the current from zero to maximum to avoid

sudden shocks to the plates, which will damage them.

3. **Bulk charge.** Constant current, increasing the voltage to around 14.4V and achieving 80% charge.
4. **Absorption.** Constant voltage, decreasing the current towards zero to charge the final 20%.
5. **Battery test.** The charger checks that the battery is holding charge.

6. Reconditioning or equalisation.

The charger applies a higher voltage (up to 16V) but a low current, around 1% of the battery capacity. This stirs the electrolyte in a wet battery and equalises a gel battery, but should only be used occasionally, and in a well-ventilated space.

7. Float.

The charger maintains voltage at 13.6V.

8. Maintenance.

A pulsed current phase to extend battery life.

Battery types

There are five main types of battery you may encounter.

■ **Open-cell wet lead acid, with liquid electrolyte.** Gas will be given off above the battery, and it may need topping up periodically. More tolerant of over-voltage, but it will gas.

■ Sealed or closed-cell lead acid.

These have a liquid electrolyte, but sealed cells. The plates will have calcium added to reduce gassing, and cannot be topped up.

■ **Gel lead-acid.** Sealed, with the acid in a gel. They are more sensitive to over-voltage and can be permanently damaged by this. Maximum voltage should normally be 14.4V, but can rise above this if the current is kept low. Any gas bubbles produced at the plates are recombined as they pass through the gel.

■ **AGM (absorbed glass mat) lead-acid.** The electrolyte is held against the plates in layers of mat. They are also sealed, need 14.7V to fully charge, and can be damaged if the voltage rises too high.

Prices are manufacturers' RRP: products are often available more cheaply online

Sealey Speed Charge 10A, 15A

PRICE: 10A £80, 15A £95 (PROMO PRICES)

Contact: www.sealey.co.uk

Sealey have a wide range of chargers, but we thought these two units looked the most appropriate. Again they are broadly similar to each other, but with different outputs. They are both 3-stage chargers, but with an added optional desulphation mode.

They have three current levels – 2A, 6A, 10A and 2A, 8A, 15A respectively – and can be used on two battery types. The first is what they call calcium, which we took to mean wet lead acid, as these often have calcium in their plates, and the second was gel/AGM.

Setting up was simple, with one button for the battery type and one for the charge current, though confusingly the symbol for the 2A setting was a snowflake! We think the idea is that you could use this setting to keep a battery ticking over in sub-zero temperatures. LEDs show the progress of the charge. The 15A also has a small display, showing volts and percentage charge. The leads are of ample diameter and a generous 2m long, but with only partly shielded clips.

On test, we appeared to hit a snag. With the units set to the calcium type, the voltage rose to a maximum of 15.7V for the 15A unit, at which point the current was still 3A, before dropping to a 13.60V float. For the 10A unit, the maximum voltage was even higher at 16.0V, with the current still 9A. This was well into the gassing phase, and we could smell the hydrogen being given off before it dropped to a 13.65V float. We passed our results on to Sealey, who sent them to the manufacturers, Schumacher. They confirmed that these were in line with their own

test figures, which they considered to be appropriate. We have to say that we would be very cautious about charging them on this setting anywhere except in the open air.

However, we then tried them on their gel/AGM settings and got much more comfortable results – 14.6V, 1.2A, 13.50V float for the 10A model, and 14.7V, 1.3A and 13.60V float for the 15A. These were exactly right for AGM batteries, and would also suit well-ventilated wet batteries. Maximum bulk currents were 9.7A and 14.8A respectively, with battery charges of 87% and 88%, so we would suggest that for most applications you use this setting, only reserving the calcium if you want to condition the batteries.



Waeco MCA 15A, 25A

PRICE: 15A £209, 25A £259

Contact: www.dometicgroup.com

Waeco have a wide range of chargers and inverters, and usually have a fully portable unit in the range, but presently they just have a small 4A unit or two larger semi-fixed units. We put the latter pair to the test. Both are similar in style, look and features, being 3-stage units (bulk, absorption and float) with a fourth stage that switches Phase 1 on every 12 days to stir up the batteries. The 15A has one main output for the service batteries and a smaller 2A, 13.8V output to keep the starter battery topped up. The 25A has two main and one starter outputs. Optional extras include a temperature sensor lead, battery sensor and remote control. Dip switches allow you to change the voltage from 14.4V to 14.7V for AGM or winter, and to set a sleep mode that reduces fan noise.

Operation is simple – connect up and turn on. An LED shows the state of charging. No output leads are supplied, but this allows you to make up your own of the correct length and diameter. Outputs were 14.8V and 13.8V for both, with charge to 93% of capacity.

■ **Lithium or lithium-ion.** These specialised batteries require very sophisticated and tightly-controlled charging regimes, and while some of the chargers on test claimed to have a lithium setting, we would advise you to contact your battery supplier and confirm their suitability.

Charger features

Chargers may have extra features: these can include settings for different battery types. If they only have one setting, this should be suitable for all lead-acid batteries.

Some may have displays showing the current going in, the voltage and the state of charge. Some may have a low-voltage setting, which will start a battery however low its voltage. This is important, because most modern chargers check the voltage across

their terminals before they will commence charging. If they see a voltage below 10V or so, they see this as a fault situation, with possible damaged plates in the battery, so will not start the charge. Whereas, in fact, if you have left a light on in the boat for a week the voltage could have dropped to 5V or 6V or less, yet is an otherwise good battery.

If the charger does not have this setting, no amount of cajoling will make it fire up. If you know your battery is otherwise good, a solution is to connect it briefly to a full battery, positive to positive, negative to negative, taking great care to avoid sparks by connecting one end to a terminal away from the battery. The charger will think 12V are present, and it will then take over. In a similar vein, some units have a power supply

mode in which they will deliver 13.6V through the terminals even if no battery is present, allowing you to run lights or any 12V equipment independently.

Finally, some units may have temperature compensation. If the ambient temperature falls below 5°C the battery will require a higher voltage to push the current in. Similarly, if it goes above 25°C it will need less current, or it could be damaged. Some units will have a temperature probe on a wire that you can stick to the top of the battery to adjust the output for this variation. Others may allow you to set a winter or low-temperature mode. Alternatively, the AGM setting can be used in winter, but remember to switch back as the weather gets warmer or you'll damage the cells.

What size charger?

The output you need from your charger depends on the size of the battery you'll be charging. In theory, the optimum maximum current you should be putting in is around 10% of the battery capacity. This will charge the battery in 10-12 hours, and avoid damaging the plates with too much current.

In practice, anything between 5-20% or even 25% is acceptable, with some batteries (particularly AGM) happy to take up to 35%, though you should avoid doing this often.

Some chargers will have different current settings, allowing you to charge small batteries without damaging them. If you have more than one battery linked together, breaking the link and charging them separately is often a good move.



Battery chargers on test

Clarke 6A & 20A

PRICE: 6A £48, 20A £84

Contact: www.machinemart.co.uk

Another pair of chargers with different outputs, from a well-known maker in the automotive market. These are no-frills multi-stage units, but with some neat features, at competitive prices. They both have a diagnostic stage, plus soft start, bulk, absorption and float, but no conditioning or equalisation. They have just one charge cycle, covering wet, gel and AGM, and three settable currents – 2A, 4A and 6A for the smaller unit and 2A, 10A and 20A for the larger model. A compartment in the base allows you to stow the mains leads and 1.75m battery leads out of the way, avoiding



them dangling loose as you carry them. Press buttons make setting them up quick and easy. On test they delivered a maximum 14.50V, and 5.6A and 19.0A respectively, and charged the batteries to 89% and 90%.

Abso Kisae 20A

PRICE: £240

Contact: www.merlinequipment.com



Merlin did not have a portable unit available at the time of test, so they sent us their smallest fixed unit, the Kisae 20A. This is another sophisticated charger, with a corresponding price tag. It has three outputs, one for the main service bank and two more for engine start and generator start batteries. In use, the main bank gets the priority charging until it has reached float stage, when charging moves to the other two.

It can be set for four different battery types and end voltages: flooded lead acid (14.4V), gel (14.2V), AGM (14.3V) and lithium. The current can be set to 5A, 10A, 15A and 20A to suit the size of battery, and it will start as low as 2.5V. It has four basic stages – bulk, absorption, float, and maintenance every seven days, plus you can set equalise and recovery modes. There is also a silent setting that cuts the fan down overnight, and a power supply mode. A digital screen shows all the operating parameters, volts, amps, battery type and mode, for each bank. The unit is waterproof to IP32, and you have to make up your own leads.

On test it delivered 14.4V maximum and 19.8A, charging the battery up to 91%.

Ring Smart Charge 8A, 12A

PRICE: 8A £100, 12A £110

Contact: www.ringautomotive.co.uk

These are two identical-looking models, but with different outputs, and are very sophisticated 7-stage chargers with a host of features. They can be set for standard lead-acid batteries, with a maximum 14.4V output charge, or AGM (as used in cars with stop-start systems) with a maximum 14.6V. They also have a winter mode, which increases

these voltages to 14.6V and 14.8V respectively. The input current can be set to levels from 2A upwards to cater for smaller batteries. They have a battery test feature which will measure the actual cranking amps of the battery compared to its rated figure, and also have an



alternator test mode.

The recondition mode puts a low current into a deeply discharged battery, and the memory saver function allows you to change the battery without losing all the settings of the radio, etc.

The screen shows current, volts, percentage capacity reached and all the functions

activated. Setting up all these features was the most complicated process of the test, but we got there eventually.

The case is rubberised for protection, and the substantial cables are 1.5m long with large, fully-insulated crocodile clips. On test, their maximum wet voltage was 14.35V, with 13.60V float, and maximum currents of 7.8A and 11.8A. Battery charge was 90% for both. The 12A version costs only £10 more than the 8A, so it's well worth paying the extra.

Safe charging

Even with modern regulated chargers you should observe the normal safety precautions when working with batteries.

- Wear goggles and gloves, avoid sparks or naked flames, and always charge in a well-ventilated space.
- Connect the charger leads to the battery terminals first, before connecting to the mains or switching on, to prevent sparks – and always switch off before disconnecting the leads.
- Some chargers have a no-spark feature that stops current from flowing until the leads are connected – but don't rely on this.

Model	Rated Max Current (A)	Voltage (V)	Max test Volts Normal (V)	Max test Current (A)	Max battery Capacity %	Price (RRP)
Abso Kisae 20A	20	12	14.40	19.8	91	£240
Clarke 6A HFBC 12	6	12	14.50	5.4	89	£48
Clarke 20A HFBC 12/24	20	12/24	14.55	19.0	90	£84
Ctek M100	7	12	14.60	6.9	94	£130
Ctek M200	15	12	14.60	14.8	95	£175
Ctek M300	25	12	14.60	27.0	95	£280
Numax 10A 1000	10	12	14.55	9.9	87	£80
Numax 20A 2000	20	12	14.55	19.7	88	£120
Noco Genius G15000	15	12/24	14.50	14.6*	90	£185
Ring Smart Charge 8	8	12	14.35	7.8	90	£100
Ring Smart Charge 12	12	12	14.35	11.8	90	£110
Sealey Speed Charge 10A	10	6/12	16.0**	9.7	87	£80
Sealey Speed Charge 15A	15	6/12	15.7***	14.8	88	£95
Sterling 7A	7	6/12	14.40	7.0	90	£50
Victron Blue Power 10A	10	12	14.45	9.8	92	£105
Waco MCA 1215	15	12	14.80	14.7	93	£209
Waco MCA 1225	25	12	14.80	24.9	93	£259
eBay 12A	12	6/12	16.0+	5.6	68	£30

* See the product notes ** This figure was on the Normal setting. Set to Gel/AGM it was 14.6V

*** This figure was on the Normal setting. Set to Gel/AGM it was 14.7V

Prices are manufacturers' RRP: products are often available more cheaply online

Ctek M100, M200, M300

PRICE: M100 £130, M200 £175, M300 £280

Contact: www.ctek.com

Ctek have led the field in microprocessor-controlled, multi-stage chargers for many years, and they have become a byword for quality, albeit at a premium price.

The units are robust, waterproof and incredibly simple to set up and use. There are two Ctek ranges – standard automotive units, plus marine versions. The latter have a few extra features – at a higher price – including longer cables and a night mode for the 15A and 25A models, which cuts the charge rate back and stops the cooling fan disturbing your sleep.

The 7A M100 is an 8-stage charger, with an analysis phase after the absorption phase. This first shuts off the current: then, if the battery voltage drops below 12V within three minutes, it signals a fault with the battery, usually when one cell has failed. A simple press-button sets the modes, which can be normal, for wet batteries; AGM, which also doubles as an increased voltage winter setting; or recondition, which stirs up the acid. Finally you can set supply mode, in which the charger just delivers a constant 13.6V, regardless of whether a battery is connected. The charger will start a battery that has fallen as low as 2V, or in fact below this if you use the supply mode. Cables are 2.3m long, with optional ring terminal ends or fully-shielded crocodile clips.

The M200 (15A) and M300 (25A) have the same features as the M100 but with longer 3.5m cables with ring ends, and a temperature probe as standard. They each produced a maximum 14.60V absorption phase, and 13.60V float. Maximum currents were 6.9A, 14.8A, and 27.0A respectively, and battery charges were 94%, 95% and 95% – the highest of the test.



Victron Blue Power 10A

PRICE: £105

Contact: www.victronenergy.com

The latest Blue Power model from Victron is a very interesting unit. It is waterproof to IP65, with 1.9m leads, and optional clips or rings. It can be set for three battery types: Normal, 14.4V, which it recommends for flooded batteries, flat plate gel, and AGM. High, 14.7V, is for flooded Calcium batteries, Optima high-performance spiral-cell AGM, and Lithium.

It is a 7-stage unit, with an initial test phase, plus two float phases, 13.8V for two days, which then drops to 13.2V, to prolong battery life. It also has an optional recondition phase. This delivers up to 16.5V, but at a maximum 0.8A. This will equalise wet or gel batteries, and de-sulphate the plates, though it admits this will only have limited effect. It can be set for low current, for small batteries, and has temperature compensation built in to the unit. It actually looks very similar to the Ctek 100 in size, features, mode of setting up, and performance, and like the Ctek it will start a battery from zero voltage, or operate as a 12V power supply.

On test it delivered 14.45V maximum, and 9.8A, charging the battery to 92%.



eBay 12A charger

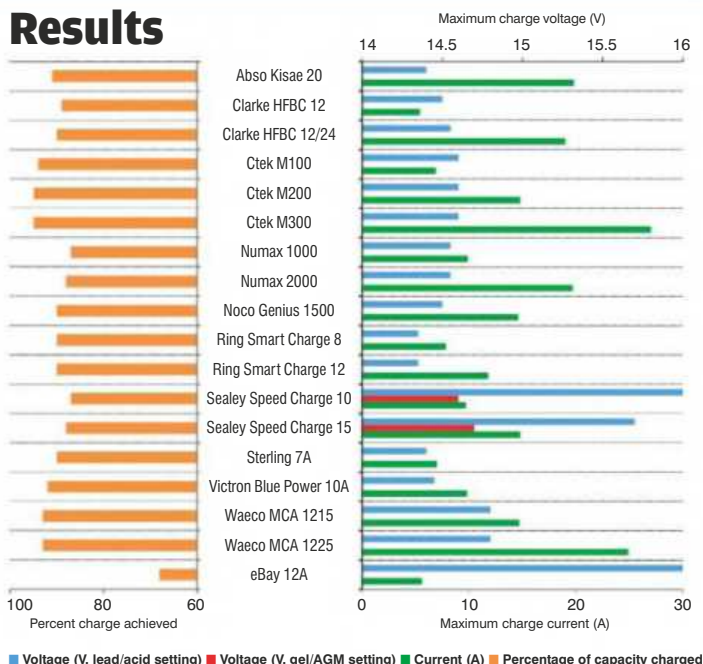
PRICE: £30

The advert for this said 'Automatic 12A charger', so for just £30 it seemed we couldn't go wrong.

Sadly, when it arrived the reality did not match the claims. In the instruction leaflet, the 12A was termed an RMS rating, which stands for root mean square, and really only applies to alternating currents. It never delivered more than 5.6A and, as for being automatic, on test it never turned off. When the voltage went past 16V and was still rising, we switched it off for safety reasons. Verdict – don't bother.



Results



PBO verdict

The portable charger market is in a state of flux at present as new EU regulations come into place. All chargers will eventually have to comply, which means some makers are taking longer to introduce new models so there are fewer about. Still, we found enough to give a good spread of performance and price.

If your batteries are around 100Ah, then you will need at least a 10A charger, in which case the Ring Smart Charge 12 at £110 came out best for performance, features and price, and this is a very new model, so fully compliant.

If you have a larger bank, then

the Ctek M200 at £175 provides well-earned quality, features and performance, while the Clarke 20A at £84 gives you maximum bang for your bucks in a simple no-frills charger.

But if you only have a 60-70A battery, then Sterling's 7A at £50 cannot be beaten.

Both the Ctek 100 and Victron 10A are waterproof to IP65, useful if yours is a damp boat, and both will start a battery from zero volts.

As usual prices vary if you shop around, but remember you may not always get the same after-sales back-up.

And if you think you'll save money going to eBay, then tread very carefully.



Hantu Biru anchored in Caladh Harbour

A Snapdragon in Scotland



As PBO prepares to say goodbye to its much-loved project boat, Ben Meakins recalls *Hantu Biru's* farewell cruise in the Kyles of Bute

As we stood on the pontoons at Scotland's Boat Show in mid-October, the visitors told us that the summer had been awful. In fact, the weather – set fair for the foreseeable future – was better than they'd seen all summer. Go sailing, they said. You'll never see the Clyde like this in October again.

We didn't take much convincing. After all, we reasoned, it would be rude to take *Hantu Biru* all the way to Scotland and not make the most of the beautiful weather and the stunning scenery, resplendent in its autumn colour. But with two days and the wide Clyde spread out in front of us, where should we head? We asked some visitors, and the answer was unanimous – head for the Kyles of Bute. And so we did.

In the early afternoon the day after the boat show, the pontoon that had imprisoned *Hantu Biru* was craned out. After a bustling boat show, it felt like a treat to start the engine and head out of Inverkip into the Clyde. Outside the entrance there was a Force 3 blowing from the north-west, and we hoisted the sails and headed downriver. *Hantu Biru* slipped along nicely in the flat water, the river chuckling under her bow and a lovely low sun illuminating the placid

surface of the Clyde and the hills beyond.

We sailed down the Clyde until we could see the buildings and spire of Rothesay Harbour and, rounding the lighthouse at Toward Point, we hardened up onto a beat, heading for the East Kyle. Here the water was flatter still, and we dribbled along as the sun slid down, turning the hills an ever-deepening shade of orange. The wind, blowing down the loch, contained frequent wind shifts, and as the sun set we started sailing like a racing boat, tacking on the headers at the edge of the Kyle to give us the best angle on the other tack. As the sun

set the temperature dropped, so out came the thermals, fleeces, hats and gloves. Now warm, we were enjoying a magical sail. The Milky Way was clearly visible against the silhouettes of the hills, and *Hantu Biru* slipped along making barely a ripple.

As we made our way up the East Kyle the wind eased, and as we sailed through the moorings on the approach to the Bute Ferry at Colintraive it completely died, so we furled the jib and reached for the engine switch. The nav lights dimmed as the engine struggled to turn over. Bugger. The boat had been at an overcast boat show for three days, instruments and cabin lights turned on, and before that on a lorry with the solar panel covered up. A good few hours of night-time sailing with lights and instruments blazing had reduced its charge to 12.2V, not quite enough to turn the



Approaching Rothesay on the placid surface of the Clyde



'A sailor could'na have a better wife nor wan of the Maids of Bute; he'll maybe no' get mich tocher with her, but she'll no' come huntin' the quays for him or his wages on the Setturday'



After a quick lunch stop anchored in Wreck Bay near the Burnt Islands it was time to head down the East Kyle again. Once more, the wind was on the nose, and we beat slowly towards our second stop, Rothesay. The wind died as we approached and we motored in accompanied by a pair of shy harbour porpoises, easy to spot for once in the oily calm.

Rothesay was once a thriving weekend getaway for Glaswegians, but had since lost some of its business to overseas holidays – although things have apparently picked up since the recession. It's a handsome town from the sea, with imposing Victorian buildings overlooking the harbour. We moored to a moss-covered finger pontoon in the outer harbour, *Hantu Biru* dwarfed by the 30-footers moored alongside. Visitors to the boat at the show had recommended the fish suppers, and we headed that way to find out. 'You'll no' get fresher than this', the owner said as he lowered two fillets the size of my head into the fryer. And true to his word, the fish was the best I'd ever tried.

As Wednesday dawned, we had to return to Kip to get the boat ready for her long lorry journey back down south. As we motored out of Rothesay, we expected another flat calm, but there was a steady 15 knots of breeze. It was a beat, naturally, but as our last ever sail in *Hantu Biru*, you couldn't ask for better. We took a long tack across the Clyde and the wind lifted us up to Wemyss Bay, where workmen were busy upgrading the ferry terminal. *Hantu Biru*, one reef tied in the main, lapped up the seven-mile passage happily. Sitting with the tiller in one hand and a cup of tea in the other in the bright, cold autumn sunshine, life looked pretty good – and the boat performed faultlessly.

We'll be sad to see her go. Our quick snapshot of Scottish sailing in unseasonably pleasant weather was an enticing taster of one of the best cruising grounds in the world, and one thing is for sure – it made a fitting final sail to round off the four-year project.



Skelmorlie bathed in October sunshine

engine over. We should have kept it running longer out of Kip, but the thought of a sail had led us to stop the engine early.

Luckily, *Hantu Biru's* BMW D7 came with a starting handle, and after 10 minutes of hard work the engine coughed into life, pouring amps into the battery again. Phew. With no damage done, except to our pride, we motored through the Burnt Islands in pitch-blackness, choosing the northerly channel, its marker buoys lit, towards Caladh Harbour. Caladh nestles behind a rocky islet, Eilean Dubh, and opened up under torchlight to show one small boat on a mooring and some houses ashore. We dropped the hook in the deepest patch of water and sat in the cockpit, listening to the eerie birdsong and marvelling at the stars overhead – but soon the cold began to bite and dinner to beckon. We repaired below, and a tasty meal was soon cooking

on the stove, which warmed the cabin to an acceptable temperature – as long as the thermals and hats stayed on.

Next morning we awoke to a bright, sunny and flat-calm day. Breakfast over, we used our new inflatable kayak tender to paddle around Eilean Dubh and explore the rocky shoreline before heading out for a sail up to the top of the Kyles to see if we could locate the Maids of Bute. Legend has it that two fishermen went out fishing one day and failed to return. Their wives waited forlornly on shore, and waited so long that they turned to stone – and they're still there today. Just west of Buttock Point, we spotted them – two gaudily-painted rocks, one short, one wide. Para Handy described them thus: *'A sailor could'na have a better wife nor wan of the Maids of Bute; he'll maybe no' get mich tocher with her, but she'll no' come huntin' the quays for him or his wages on the Setturday'*.

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Reconditioning a turbocharger

**STEP
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A turbocharger on an engine is an effective way to get extra horsepower, improve fuel consumption and emissions. But when a turbo goes wrong it's definitely time to call in the experts, as David Parker reports

The indication that something was seriously wrong was the black smoke coming from the exhaust port in the transom.

Clearly I had a problem with the portside 75hp Yanmar engine on my twin-engined 7m (23ft) Seaward motorboat – but this was a problem which came with the extra dismay caused by the sinking feeling that it was somehow self-inflicted.

The problem had begun with a smear of oil which had constantly appeared at the junction of the intake manifold and the coupling connecting it to the air duct which cooled air from the turbocharger.

It first appeared shortly after I bought the boat, but only seemed a minor problem with no apparent serious effects.

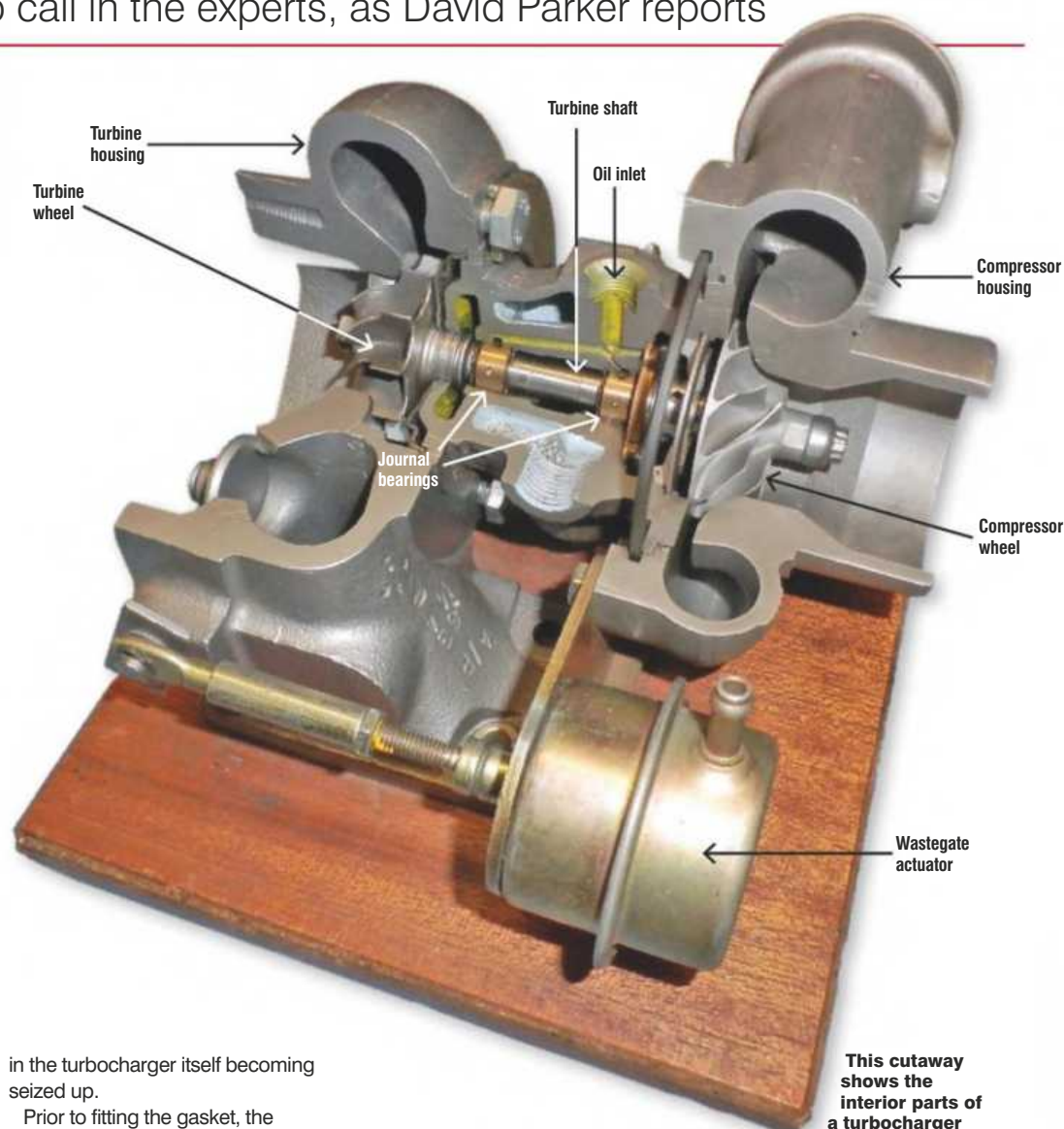
I lived with it for a few seasons and had taken pictures of the weeping leak to various marine engineers in yards and at boat shows, but no one could suggest what it might be.

So eventually I decided to investigate it myself.

After cleaning the air filters, I stripped down the intake manifold to inspect the gasket at the coupling. Now I saw the problem. There was no gasket: someone in the past had removed the coupling and then put it back without one.

It was only after I fitted a gasket and reassembled everything that the problem with the smoke started – particularly when the engines were under load.

I can only hazard a guess that a period of idleness with the air intake assembly stripped down and then nursing the engines had caused a crucial build-up of soot and corrosion, which then resulted



in the turbocharger itself becoming seized up.

Prior to fitting the gasket, the slight weeping of oil had also caused me to go easy with the engines for a while before I had time to sort things out. I had mainly been operating at low speeds with only occasional bursts of high power. Also, my habit of lazy river journeys and slow speeds in lumpy weather conditions had meant the engines weren't really getting the

workouts that diesel engines need for a long, healthy life.

At low power, the exhaust flow had not been sufficient to operate the turbocharger efficiently – and as the build-up of oily soot became worse, the overall problem got worse too.

This under use, coupled with very

gradual general corrosion over time, meant I had a turbo which would no longer turn.

It was time to call in the experts, so I took the turbocharger unit for reconditioning at specialists Universal Turbos in Fordingbridge, Hampshire. Here's what they did.

Turbo power: how a turbocharger works

Turbochargers improve the performance of an engine by forcing more air into the cylinders during the combustion process. An engine without one, which draws air into the cylinders during the induction stroke at atmospheric pressure, is known as 'normally aspirated'. The turbocharging process means more fuel can be mixed with the greater quantity of air, allowing more energy to be released which produces higher power.

More air is pumped into the engine by a turbine driven by the engine's exhaust system. As exhaust waste gases leave the engine they are directed onto the blades of a turbine, which causes it to spin at very high speeds of 100,000rpm or more (the faster an engine runs the more the turbine spins: my boat's turbos are rated at up to 160,000-170,000rpm).

The exhaust turbine is connected to a shaft that drives a compressor wheel which draws air in through the air filter and forces it under pressure to the inlet manifold and on into the

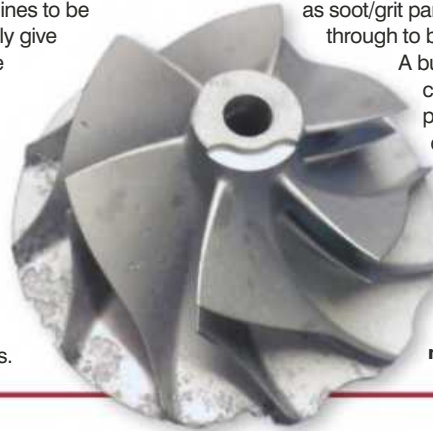
cylinders. To cool the hot compressed air from the turbocharger it is passed through an air cooler fed by cooling water. The turbocharger is lubricated by oil from the engine's oil pump and the internal shaft bearings float on a film of this oil.

The principles themselves are fairly straightforward and turbochargers allow smaller, lighter engines to be used: these not only give better performance but improve fuel consumption and produce better emission standards. Most diesel cars now have a turbo – partly for performance and partly to meet emission standards.

The high temperatures and speeds turbos operate under demand that units require precisely-tooled machine parts – for example, they don't use seals but very small piston rings. Components also operate at very fine tolerances, and these tolerances can become worn. This causes an imbalance, making the turbine shaft vibrate, and foreign matter such as soot/grit particles can work their way through to bearings which become scored.

A build-up of carbon, rust and corrosion is often a particular problem on boats due to a combination of underuse and operating in the marine environment. Aluminium components in particular are vulnerable to corrosion.

Aluminium corrosion can be a particular problem in the marine environment



If a turbocharger will not turn freely, do not try to force it. This turbine compressor wheel has suffered major damage, possibly by someone trying to free it with a screwdriver

Tips to give your turbo a long, trouble-free life

One thing not to skimp on is the quality of the engine oil used, and to maintain the life of a turbocharger it's very important to regularly change that oil.

And turbos like clean fuel: dirty fuel can produce dirty exhaust which goes through the exhaust compressor wheel, causing it to clog up with soot – so change the fuel filters regularly.

It's also worth raising the question of fuel additives. Mention fuel additives to engine manufacturers and you'll typically get them sucking air through clenched teeth and shaking their heads: they don't recommend them. However, speak

to marine engineers and you'll find that a lot of them do use and recommend additives, so it's up to you whose advice you choose.

One thing they will all tell you, though, is that in day-to-day operation it's important to never stop a turbocharged engine from full power because this will damage it. Each time the engine is used it should be left to idle for a couple of minutes to 'spin down' and cool while oil circulates before stopping. Switch off when hot and 'heat soak' can occur which means the oil left in the bearings burns, causing soot which will block up oil galleries and lead to seized bearings.

Reconditioning costs

The price of reconditioning a turbocharger obviously depends upon the work required: in my case the cost was £450 for this IHI RHB5 turbocharger. Various rebuild kits are available, but if parts are worn it is important to ensure only suitable replacements are used.

James Hard, technical director of Universal Turbos, warns against the cheap rebuild kits which can be bought

online and which could misshape or degrade quickly, causing even more damage.

It is possible to service a turbocharger yourself if no significant damage is present, but it is crucial to ensure the correct tolerances are used. If the land where a piston ring sits is damaged, for example, it will need to be machined out, and this is a specialised job – as is balancing the turbine shaft after reassembly.



Part of the cost with this job was a new sleeve welded into the previously corroded exhaust port in the turbine housing

Many thanks to Graham Page, James Hard and the team at Universal Turbos for their assistance with this article. www.universal-turbos.com

Turn over to see how to strip down and reassemble a turbocharger



Stripping down the unit

The first job was to strip down the turbocharger to examine the individual components. The unit itself came apart in a fairly straightforward manner. From his initial inspection, James Hard at Universal Turbos could see that there were no moving

parts that were actually damaged, although the corrosion on the exhaust housing was evident. However, this visual assessment could only go so far because critical tolerances could only be checked once the whole assembly was thoroughly cleaned.

1 This is what the exhaust port looked like once the turbocharger had been removed. The build-up of soot, carbon and corrosion can clearly be seen, and this had caused the turbine wheel to seize up.



2 Before any strip-down work started, James made punch match marks on the casings to show how the turbine chamber, bearing chamber and blower chamber are bolted together.



3 James removed the mounting bolts and retaining plates of the turbine housing to gain access to the turbine wheel. Here the heat shield retaining plate can be seen behind the wheel.



4 After clearing away the accumulated soot, James inspected the turbine wheel where it exits from the bearing chamber on the exhaust side and checked for any signs of damage on the turbine blades.



5 When the M5 mounting nuts of the compressor cover were removed, the internal build-up of grime and oily deposits were obvious.



6 This is the bearing chamber itself with the compressor wheel uppermost. A turbine wheel jig was used to hold the assembly firmly in a vice while the compressor wheel was removed.



7 The turbine wheel has also now been removed, revealing a build-up of soot and carbon on the turbine side of the bearing housing. In the centre is one of the floating bearings which support the turbine shaft.



8 Care and specialist knowledge are important at every stage. For example, there is a left-hand thread on the turbo wheel: try undoing it the wrong way and you could strip it. Here the correct Torx screwdriver was selected to take out the seal plate.



9 This is the compressor side of the bearing chamber once the turbine and compressor wheels had been removed. A seal plate (bottom left) thrust collar, bearing and oil thrower were removed to show the brass floating bearing on this side which supports the turbine shaft.



10 Finely-machined components are used in the manufacture of a turbocharger, as shown here with the thrust collar. Fixings and components can easily get damaged if they are removed incorrectly.



11 This, at its heart, is what constitutes a turbocharger. Two spinning turbines on a shaft, one driven by exhaust fumes to power another which draws in compressed air. The compressor wheel and brass thrust collar are on the left and the turbine wheel on the right.



12 The components of the turbocharger, stripped down and ready for cleaning. Intricate parts of the assembly were cleaned by hand and items such as piston rings and circlips replaced. Larger parts went for degreasing, hot washing or specialist blasting.



Reassembling the turbo

Universal Turbos has two distinct sides to its facilities: one is known as the 'clean' side where the engineers have their impressive range of tools and well-ordered workbenches. The other part of the workshop is where most of the serious

component cleaning takes place with the specialist washing and blasting machines. Next to this is also a double-height warehouse section literally stacked to the ceiling with turbochargers for spares and rebuilds.

1 In the first stage of the cleaning process the components go through a degreaser which uses non-aggressive chemicals to get rid of grease and oily deposits.



2 Next they are put through a commercial hot washer. This is basically like a giant dishwasher operating at 80°C which uses recycled water to remove scum and debris.



3 Tough carbon deposits are removed in this blasting machine. A hand wand allows detailed cleaning of components that need careful blasting.



4 As soon as casing parts are thoroughly cleaned they are spray-painted to avoid 'flash rust'. Sealants are selectively used in the rebuild process, as with the water fittings on housings.

5 A smooth, shiny new stainless steel sleeve has been welded into the exhaust port of my turbine housing, which had suffered heavy pitting and corrosion over time.



6 Here's the compressor cover after cleaning – quite a transformation compared to how it looked when first disassembled.



7 After reassembly of the CHRA (centre housing rotating assembly) a critical area of the rebuild is the balancing of the shaft and wheels, which is carried out using this special machine.

8 As the shaft is rotated at high speeds the machine records areas where it is out of balance. James can then stop the shaft and grind out small shavings of the shaft nut at the appropriate spot to counteract this.



9 The graphic display showing data from the dynamic balancing machine. The lower graph line shows that after James' delicate grinding, the necessary parameters have been achieved.



10 Only a tiny amount of metal needed to be removed from the locking nut to achieve the correct balancing of the shaft – perfect balance is important, not least to avoid 'turbine whine'.



11 Graham Page reassembles the unit after it has been rebalanced. New mounting screws and studs for the exhaust mixer elbow are also fitted at this stage of the rebuild.

12 The turbocharger reconditioned, reassembled and ready for refitting to the boat... the only trouble is I have twin engines, so now I'm wondering what the other one looks like on the inside!



Got a question? Email pbo@timeinc.com

Here's just a selection of the latest questions from PBO readers. Email or write to the address on page 5 and our experts will answer your queries

MASTS AND RIGGING

Did a lightning strike scorch my halyards?

Q Do you have any suggestions as to what might have caused these burn marks to my halyards? My boat was left in a secure North East marina for two weeks and there was a huge electrical storm while I was away, so could lightning have caused the marks? The instruments were fine, and there was no other damage to my boat, nor any others nearby.

*Chris Prow
By email*

MIKE COATES REPLIES: Have you checked with the marina to see if there was any localised lightning activity during your period of berthing? If there was, someone would almost certainly have seen the strike.

Looking at the damage to the halyards, I think it's unlikely to have resulted from lightning. The boat would almost certainly have sustained other damage –

electronics and electrical failure – and there's no sign of any burns or scorching elsewhere in that area.

From what I've seen on other vessels that have been struck, the lightning would have taken the most direct path to earth, normally through the mast (especially if keel-stepped) and the shrouds. When this occurs, there is often significant damage in the area of the shroud plates.

Side flashes also occur to metallic objects such as the engine, steel tanks and so on. The lightning bolt will travel along the least line of resistance, ie anything that readily conducts electricity – cabling, metal pipes – causing damage to any attached equipment on its way.

The damage to your halyards appears quite localised, almost as if it has been burnt with a blowtorch or similar source of heat: how this might have happened is anyone's guess.



How Chris Prow's halyards became scorched is a mystery

ELECTRICS

Polar opposites?

Q Following your expert advice regarding the polarity warning light on a reader's Moody Excel 34 showing when the polarity was wrong and connected to shore power ('LED astray by polarity warning light', PBO September 2015), could you please advise if any damage is done if the warning light is ignored? On our Moody 31, we have noticed that

when we are plugged into shore power in some marinas the light comes on, but it doesn't do so in other marinas.

Paul Clarke, by email

PAUL HOLLAND REPLIES: The reason that polarity is important is because most mains wiring systems on board yachts are wired with single-pole circuit protection. This means that there

is only a circuit breaker (or if very old, a fuse) in the live wire. This is satisfactory as the neutral wire is at the same potential as the earth and all the voltage is carried in the live wire.

If you get a fault between neutral and earth, no short circuit will happen and therefore there is no over-current/fire risk to protect against. However, if you have a fault between live and earth then a short circuit will occur and the circuit breaker will trip.

The danger with reversed

polarity supplies is that the protection is now in the neutral and the live wire is unprotected! It will cause no damage – unless there is a fault.

To easily correct this problem, make up a short extension cable which flips live and neutral. If you moor at a marina and experience reverse polarity, all you need to do is insert the flipper.

In all cases, provided an RCD is fitted, the risk of electrocution is unaffected – the RCD will work irrespective of polarity.

THE PBO EXPERTS

To ask a question email pbo@timeinc.com and include your address. Pictures are helpful



SEA SAFETY
Will Stephens is Staff Officer Operations (Coastal Safety) at the RNLI



BOAT BUYING
David Harding is a regular contributor to PBO: his photo archive is at www.sailingscenes.co.uk



CRUISING
Stuart Carruthers is the RYA Cruising Manager and has sailed extensively



SAILS
Ian Brown of the International OneSails loft group is an expert on sails



MASTS & RIGS
Mike Coates worked in the spar and rigging business for many years



SURVEY AND CORROSION
Colin Brown runs a marine survey and consultancy company, CB Marine Services



ELECTRICS
Paul Holland is chairman of the BMEA and MD of Energy Solutions (UK)



ENGINES
Pat Manley is a diesel engine course instructor and marine author

ENGINES

Water in the head is a non-starter

Q I own a 1981 MG 30 fitted with a Yanmar YSE 12, which I think is the original engine. It had an extensive refit by the previous owner in 1999 and is fitted with an hydraulic drive. Last year we had problems with water in the head, caused (we suspect) by trawlers passing at half tide when our boat was at the wrong angle on our mud mooring and not floating, with their wake pushing water under pressure up our exhaust outlet.

Our mechanic skimmed the head, replaced the gasket and renewed the valves, and the engine worked well afterwards although we did not use it extensively. This year, with the boat out of the water while we attempted to winterise it, a loose tarpaulin directed a large amount of water into the cockpit: some of this entered the air intake, and again we had water in the head. We took the head off once more to check, and found the injector pump was not working.

Since we could not fix this ourselves we sent both injector and pump to Cellar Marine Cornwall, who have given us excellent advice and service over many years. They tested and serviced all the parts, but when our mechanic refitted them the engine would not start, despite several attempts.

All the electrics seem fine and fuel is OK up to the pump: our mechanic is very good but leaves adjustments to the experts, so we would



Picture courtesy Aussieboatman

Bill Wicking's boat is fitted with a Yanmar YSE 12 like this – but he can't get his to start

be very glad of any advice you could give.

We have been PBO readers for 45 years: many thanks for all your helpful and interesting articles.

Bill Wicking
Hastings, Sussex

PAT MANLEY REPLIES: A diesel engine needs fuel, air and heat for it to run. The heat comes from compressing the air sufficiently to raise its temperature above the ignition temperature of the fuel: this requires enough compression and cranking speed. If either is too low, the engine won't start.

Stale fuel may give difficult starting from cold. I assume that the fuel system has been purged of any air, so that if you crack open the fuel injector supply pipe, fuel comes out when you turn the engine over. I assume also that the air intake filter is clean and that you are using the correct cold-start procedure (see your handbook). You may need

some throttle as well.

If all these checks have been performed, it is possible that when turning over the engine previously with water in the cylinder, the connecting rod has been bent due to hydraulic locking – in which case there will not be enough compression to start the cold engine. The obvious way to check this is to remove the fuel injector and measure the compression pressure with a compression gauge.

Will it run at all?

I don't normally recommend using Easy Start (ether) for starting difficult engines, but in your case what you need to establish is if the engine will run at all.

An engine with low compression won't start from cold, but it will continue to run once it has started, so you could try using Easy Start to see if it will fire up. If it does run, then I would get the compression tested.

PAINT AND ANTIFOULING

Getting into a scrape

Q I have just hauled out my Sadler 26 for the winter. The coats of antifouling have built up over the years to be quite thick over the epoxy coating, which had already been applied by a previous owner. The epoxy appears to be dark red, hard and smooth, but over the last couple of seasons when I power-washed the hull, the antifouling would detach in various places, probably due to poor adhesion.

I need to tackle complete antifouling removal this winter. Would you recommend dry scraping (in which case I'd wear a mask) or chemical stripping, and what brand would you suggest?

If I manage to get down to the epoxy, I feel at that stage some degree of keying will be needed before a fresh coat of antifouling next season. Any advice would be much appreciated.

Joe Coady
Crosby, Liverpool

RICHARD JERRAM REPLIES: The red epoxy coating could well be Blakes (now Hempel) Solvent Free Epoxy (SFE), which will be very hard.

There are basically three ways to remove the antifouling: the easiest method would be to have a professional company remove it by blasting, followed by sanding which will leave the surface of the epoxy profiled so that you can apply an antifouling epoxy tie coat prior to re-coating. The antifouling will probably need to be applied over the epoxy tie coat within six to 12 hours to obtain maximum adhesion.

The second alternative is to use a chemical antifouling stripper, of which there are numerous types on the market, and the third method is to hand-scrape, but this can be a long, hard job – particularly if there are many years of antifouling present. If finances allow I'd have it professionally blasted and save yourself a lot of hard work.

50 of the most frequently asked boating questions are answered by our experts on the PBO website. Visit www.pbo.co.uk



GAS FITTINGS
Peter Spreadborough, of Southampton Calor Gas Centre, has 20 years in the industry



PAINT AND ANTIFOULING
Richard Jerram is former UK technical manager of International Paint



YACHT DESIGN
Andrew Blyth is a naval architect with interest in stability and buoyancy



TOILETS AND PLUMBING
Gary Sutcliffe of Lee Sanitation knows about holding tanks, toilets and plumbing



TRAILER-SAILING
Colin Haines is a design engineer who has trailer-sailed for 25 years



ELECTRONICS
Chris Ellery of Greenham-Regis Electronics is a former Merchant Navy officer



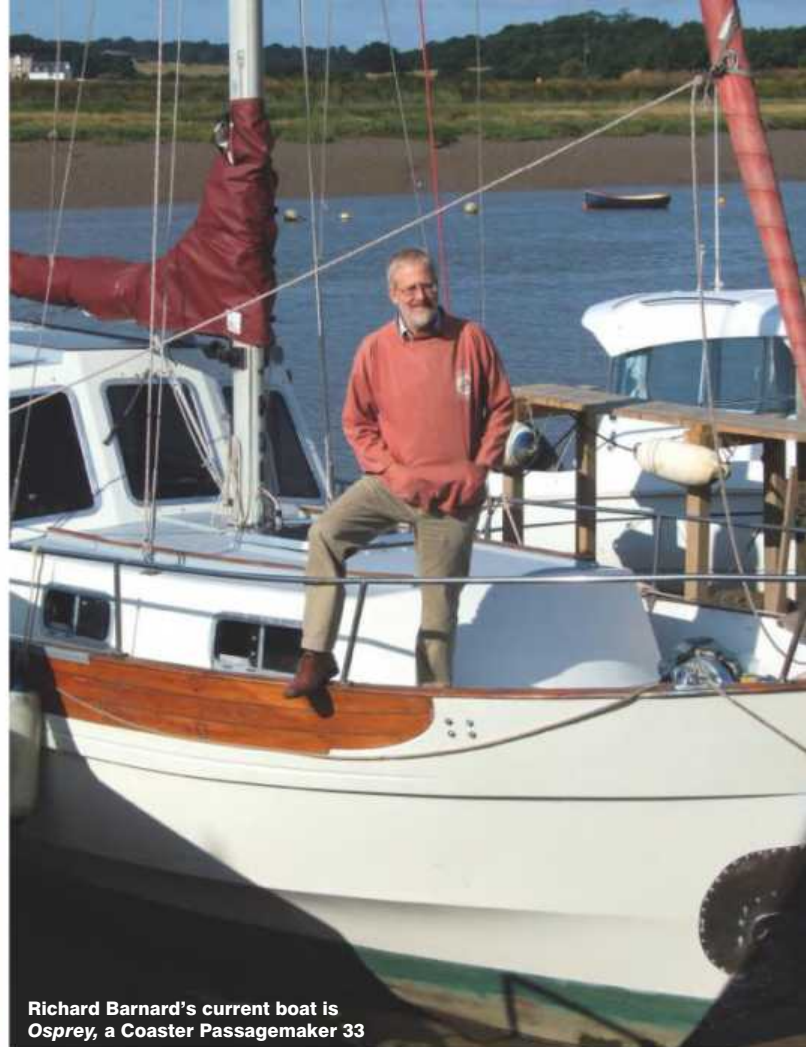
BOATBUILDING
Tony Davies has been building and repairing wooden, GRP and steel boats for 40 years



WOOD
Richard Hare is a wood technologist and long-time wooden-boat owner

40 years, 40 boats...

... and counting. Richard Barnard takes a fond look back over his colourful boat-owning history



Richard Barnard's current boat is *Osprey*, a Coaster Passagemaker 33

It all began over 40 years ago when, fresh from university, I bought an appropriately-named Graduate-class dinghy, *Topaz*, needing work. This simple plywood racing dinghy taught me to hand, reef and steer – especially reef, as she threw me overboard the first time I luffed from a run into a Force 5.

Now I was hooked, and I wanted a traditional cruising dinghy to potter around the Colne in Essex. Inside a boatyard shed on the Walton Backwaters I found a 12ft clinker lugsail dinghy, once owned, according to the yard owner, by Arthur Ransome (I wonder how many dinghies were sold with that line...). *Windsong* needed a new sail and restoration, and fitting her out gave me a taste for the pleasures of restoring boats. I paid £45 for her and sold her the following year for £250 – I was keen to go cruising.

Now earning a salary, I could afford a yacht, and *Gipsy* was a real yacht. I'd wanted a traditional

gaffer, needing work, and *Gipsy* fulfilled the criteria exactly. At 25ft LOA, she was teak on oak, built in 1895 with a clipper bow and elegant transom stern. At least, that what the old photos showed: her transom had been smashed off in a harbour gale, and she arrived at Ian Brown's yard at Rowhedge on a lorry, with a huge baulk of teak included in the price for the repairs. Jim, the shipwright, somehow converted the gaping hole into an elegant transom, and, while trimming the old shattered teak planks to receive the new ones, showed me the teak oil still oozing out in bright drops.

As she had no engine, she taught me over two seasons how to handle a small yacht in most situations (see PBO April 1979, 'Lessons from a quiet day's sail'). The learning experience was made all the easier by her superb sailing performance – she came first in her class at the East Coast Gaffers Race in 1977 and regularly slipped past modern yachts. She was sold in 1978 to buy something bigger, but while

cruising her I bought a mud-filled mahogany clinker sailing dinghy for £25, simply to save what was obviously a lovely boat. Entranced by her brass cleats and tiny blocks, I had to do something. Appropriately named *Jezebel*, she returned the favour by leaking continuously and was sold – gleaming, but still sinking.

My old mate Phil Dan and I then bought a 25ft gaffer hull, built in 1904, bare and with gaping seams. It was an exercise in re-caulking and sailmaking (see PBO April 1979, 'Quietly caulking'). She was to be my temporary sailing boat while the new main project was carried out – the boat I'd sold *Gipsy* for. *Snowdrop* was a 34ft Morecambe

Bay Prawner of unknown age: the empty hull, deckless and lying in a Cornish garden, cost £1,000 and was craned and driven to Ian Brown's yard for a rebuilding project that ran out of steam and cash. After a summer spent re-fastening planking and doubling timbers, I signed up for the winter as bosun on a charter schooner to the Caribbean. When I returned I had neither the cash nor the energy to continue, and *Snowdrop* went back... to a new owner in Cornwall!

'Needing work'

In that summer of 1979 I added a centreboard and a lugsail to a 10ft clinker dinghy hull I bought for £40. She was rather small, so the following year I sold her, bought the 12ft *Skylark* and re-rigged her as a gaff cutter, complete with topsail! (See PBO April 1983, 'All aboard the *Skylark*'). She was great fun, and lasted – like most of them – only a year. She had to go: I needed the funds to buy *Arklight*, a 23ft Bermudan yawl built by Cardnell's yard in Maylandsea in Essex in 1926 (see PBO June 1985, 'Tale of two yawls'). *Arklight* was light and fast and gave me the huge pleasure of learning how much fun it is to have extra sails to play with. I cruised all the Essex and Suffolk rivers in her over two years, relying on



Richard Barnard's first boat, the Graduate dinghy *Topaz*



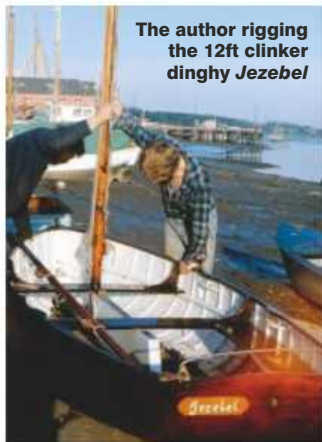
Richard sailing boat No2, his 12-foot lugsail dinghy *Windsong*, in 1976



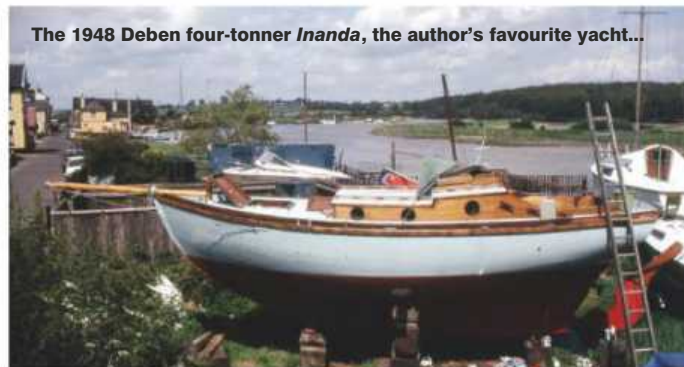
Gipsy on her mooring at Wivenhoe on the Colne in Essex



The 12ft gaff cutter Skylark – freshly rigged, with topsail



The author rigging the 12ft clinker dinghy Jezebel



The 1948 Deben four-tonner Inanda, the author's favourite yacht...



The 26ft Lone Wolf, built 1907, before conversion to gaff rig



Kittiwake on passage to Holland

her 'sideboard' to get me out of trouble (canoe-sterned, she wore her outboard on the side).

In the 1970s and '80s, old clinker sailing dinghies were plentiful and cheap, and in 1980, and for just £50, I bought another 12ft lugsail dinghy hull to restore and rig. *Widge* stayed in the family for years, and with several different rigs, before finally giving up the ghost in a garden (see PBO March 1982, 'Boatcraft'). Phil and I briefly dabbled with an 18ft clinker hull, but bare hulls had begun to lose their attraction.

The yawl was too small. She went, and I was smitten by **Lone Wolf**, a solid and classic yacht built by Ashton & Kilner in 1907. At 26ft, but rated 8 tons Thames and with a good beam and 6ft draught, she was a real ship. She took me to Holland and back and showed me the pleasures of a snug, glowing, wooden cabin in a calm anchorage.

Rigged as a Bermudan sloop, I felt she was crying out to be returned to her gaff rig. That project, and the burning off and repainting of her hull, took one winter and spring. She really needed new sails; and, short of funds, I decided that I needed to repay the money I'd borrowed to buy her and get something smaller. *Lone Wolf* was snapped up in 1983 by Dick and Pat

Dawson, who have carried out restoration work that put my efforts to shame and with whom she's remained ever since, becoming a well-known South Coast Old Gaffer.

Inanda was a Rowhedge-based Deben Four Tonner that regularly attracted my eye as she sailed past over the years. Eventually she was put up for sale, with leaking garboards (cured with new oak floors), and was soon mine. Built in 1948, she had a jaunty sheer and a pretty cutter rig. I owned her for three years – nearly a record.

I re-canvassed her deck (see PBO December 1985, 'New decks for an old girl') and in return she taught me more seamanship than any previous boat. (See PBO December 1985, front cover.) I raced her annually in the Old Gaffer races, with modest results: she was no racer, but a thoroughly reliable and safe cruiser.

A powerful vessel

What I really needed was something with standing headroom, perhaps to live on? In 1985 I said goodbye to *Inanda* and bought my biggest boat so

far – *Kittiwake*. Built by Arthur Holt at Heybridge Basin on the Blackwater, she was a 37ft gaff cutter with a bowsprit that reached to the horizon (see PBO front cover, June 1987).

Her owner took my *Inanda* in part-exchange; I still see that little four-tonner from time to time, and feel great fondness for her. She may quite possibly be my favourite yacht.

Kittiwake was bought as a liveaboard, and I upgraded her to that end. (See PBO

September and October 1987, 'Joining the liveaboards'.) With her heavy gaff cutter rig, she was a powerful vessel. After two years I realised she was hard work for an easy sail, and I sold her to buy a house and a smaller boat. She was bought by a Dutchman, who has sailed her back to visit regularly over the years,

lived aboard and was still very pleased with her when I last saw him. Apparently her photo was on the front of a Dutch cruising guide for many years.

Having bought a house, I only had funds for a small yacht and found *Leona*, a Mashfords-built 18ft sloop, lying neglected.



Inanda was PBO cover star in December 1985

After *Kittiwake* she seemed tiny, too tiny, and was replaced the following year by *Tonijon*, a pretty 1936 McGruer 22-footer with no engine or interior. I did a little work on her and then passed her on to buy one of the Wivenhoe One Design dinghies, *Pegasus*, to race and keep me afloat while I concentrated on other work.

By 1993 I had sufficient funds for a 28ft Laurent Giles Normandy class called *Gilliflower*. She was an elegant yacht, needing a complete cosmetic makeover. She sailed like a witch, and was a successful restoration that I re-sold the following year to build up the boat fund. This allowed me to buy and restore *Lapwing*, a Maurice Griffiths Bawley class 24ft Bermudan sloop with a hole in her side – so she was cheap! (See PBO November 1995, 'Plank repairs for a Bawley'.)

She gave me two years of sedate cruising, but after



a weekend blighted by a minor deck leak, a stubborn Stuart Turner pump and a tear in the mainsail, I decided it was time to try one of those new-fangled GRP yachts. *Lapwing* was sold and left me with only a Torch dinghy, which fired me up for the joys of dinghy racing. This led, a few years later, to the purchase of a Laser, which I owned for several years and sailed on hot days to remind me of the main requirement of sailing – staying out of the water – and the importance of sail trim. Planing fast, with salt spray flying, was a revelation after years of traditional cruising.

Steady comfort

Meanwhile a *Mirage 28*, *Puffin*, had arrived. This revealed the sometimes great differences between an old wooden boat and a modern design. Scrubbing off with bilge keels was also something new. Steady and comfortable, she converted me to the delights of a sprayhood!

She was sold the following year, and I searched the South Coast yards for something similar but with a bit more character. *Ella Rose* lay under a tarpaulin, a 27ft MacMillan design, fairly newly built, with an owner keen to sell. She looked like an Edwardian weekender, designed only for gentle river cruising.

Her accommodation was rather too cramped, so I sold her and in 1997 drove again along the South Coast on the hunt for a centreboarder, the value of such a thing on the East Coast finally sinking in.

Knitch was a solid 30-footer, designed and built in the 1960s by Elkins' yard in Christchurch. Fitted out in mahogany, with a long keel and centreboard, she was ideal for East Coast cruising.



MacMillan Bermudan cutter *Ella Rose*

One in a class of four, she looked chunky and modestly rigged, but sailed beautifully. Main or jib alone, plate up or down, gentle air or strong breeze, she would tack or bear away at a touch; she steered herself on most points, and with helm lashed I could adjust the course with a tweak on her centreboard tackle.

Around this time, at the end of the 1990s, I was skippering a 150ft barque on some long passages, but decided I couldn't keep on top of the maintenance so she sailed away to Woodbridge.

When home I sailed a nice little Heron dinghy, but by 2001, with a little cash spare after a house move, I heard of another Deben Four Tonner on the Blackwater and, with memories of *Inanda*, decided to revisit the past.

As with all my purchases, *Ettrick* needed some cosmetic

I revelled in slipping over mud flats and Suffolk river bars

work. When reading through old yachting magazines I often spotted the names of various boats I'd owned, and I'd occasionally read of *Inanda* and *Ettrick* being laid up together at Woodbridge in the '40s and '50s, so she felt very familiar.

Unsurprisingly, she also felt much smaller than I'd remembered, and after a

pleasant if cramped season I sold her, now gleaming, and searched for another GRP yacht, ideally

needing some improvements.

Svenskdam, a pretty Vindö 40 built in 1979, was lying at Mersea. Her deck needed replacing, and I made an offer. She was perfectly sailable, so that's what we did that summer, and I spent the winter removing the deck and cleaning up the vast areas of brightwork that made up her cabin and cockpit. She looked lovely and I had a

happy second season, including a wet thrash up the Wallet which got me thinking about something I'd never tried before – motorboating.

Now we're motoring

With *Svenskdam* sold, I searched for a traditional, preferably classic motor yacht in a condition I could afford. *Rhiannon* was a 1959 32ft Swanwick class motor-cruiser, built by Moody's and designed by Frederick Parker. She needed a thorough overhaul, and my carefully budgeted offer was accepted. With a yard's help and a lot of effort and money, she was launched again in 2004, and I spent a season gently cruising at 7 knots to favourite anchorages, always dry, always warm, but missing the reassurance of a rig and the pull of a tiller! Even with a lovely little Fairey Duckling sailing dinghy I'd bought to hang on her davits, the motoring experiment had been enjoyable, but not for me.

I sold her that winter, and returned to sailing with a GRP yacht called *Nautilass*. Her photo had appealed to me – a 28ft Canadian Aloha class, built in 1981. Traditional in design and with lots of wood below, she seemed nearly perfect – though my friends suggest that I say that about every boat I've bought!

A hankering for the cat rig led me in 2008 to buy the Freedom 33 *Perfect Freedom*. With a huge fully-battened mainsail and a thin fin keel, she sailed like a dinghy and was a joy to short-tack down the river. This interest in cat rigs inspired me, a few years later, to buy a bare GRP dinghy hull and rig it with a traditional gaff cat rig. This project



Knitch, a 30ft Bermudan centreboard sloop built by Elkins' yard



A Freedom 33 named, appropriately enough, *Perfect Freedom*



Nautilass – a 28ft Canadian Aloha class



The Essex Smack William MN15 at Wivenhoe Regatta, 2006

was great fun and, in turn, led me to the dinghy I started to build from scratch several years later.

Perfect Freedom had lots of space but drew nearly 5ft, which limited access in and out of my mud berth. I'd enjoyed my first centreboard yacht 10 years earlier and continued to favour the idea, so the fast Freedom was sold and I bought a nice Southerly 28 called *Pelican*. In theory a motor-sailer, she sailed well enough for me and I revelled in slipping over mud flats and Suffolk river bars hours before the rest.

Around this time, I joined a consortium to buy an Essex Smack. **William MN15** was built in 1889 by Howards of Maldon: she had been professionally sheathed in 1991 and re-decked in 1994. She was dry and fun, but not fast. We entered the spirit of the smack races, but not the trophy list, and preferred honing our skills in trawling under sail, though that could hardly be called successful either.

I was also missing ownership of a sailing dinghy, so I added a Yachting World Dayboat to my collection for day-sails and fishing, and enjoyed her for several years.

A real classic yacht

By 2011 I had sold the Southerly and, developing the centreboard theme further, bought a lovely Deb 33 – **Secret of Hurst**. Built in 1970, she was a real classic yacht, nearly original and in need of a full restoration. My plan this time was to explore the self-tacking jib and, as part of the full re-rig, fitted one. I knew the restoration would be a long-term project, so I tried something new to keep afloat in

the meantime – a motor-sailer.

Kingfisher was a pretty little Fisher 25 ketch, built in 1980. She offered comfort and amazing space for a 25-footer, sailed surprisingly well and converted me to the pleasures of a wheelhouse.

The conversion was so complete that I decided to pass on the Deb project, and she disappeared north to Scotland where she now sails with her new owners. While owning *Kingfisher*, I bought a little yacht to keep on a mooring in Suffolk for occasional weekends. *Sandpiper of Orford* was a Seamaster 23, an early Laurent Giles design and another centreboarder.



Fisher 25 *Kingfisher* kept Richard sailing while he restored another boat



Deb 33 *Secret of Hurst* in 2011

Meanwhile, *Kingfisher* lasted for four years and was sold in January 2015 to allow me to buy something similar, but bigger – a Coaster Passagemaker 33.

Osprey is my current yacht, one of only two of her class, built in 1984 by Priors of Burnham and designed by Alan Hill. She's solid, looks handsome, her pilothouse is a joy, she sails well, only draws 4ft, can be handled by me alone and is comfortable enough to live aboard for a few months at a time for the cruising I hope to do when I retire.

I've also started to build what I see as my perfect dinghy, from scratch – a 12ft gaff cat-

rigged ply and epoxy Mallard design from the board of Andrew Wolstenholme. Building under the winter guidance of the Nottage Institute instructors at Wivenhoe, her launch date is not too far away.

There were a few other dinghies I've rigged, and several assorted tenders, bought for yachts and sold with them, including two I've built as clinker ply dinghies. Counting these, I must have owned over 40 boats, one for every year I've spent sailing: from 6ft to 37ft,

dinghy, cruiser and racer, gaff, cat, lug and Bermudan, sloop, cutter, ketch and yawl, long-keel, shoal-draught, bilge, fin and centreboard, sail, motor-sail and power.

Quick-change artist

On the one hand, I've never got to really know my vessels as well as most sensible people do: my friend Tim has owned and loved his 18ft cruiser *Dipper* for as long as I've been working my way through all my boats, and I suspect he's had more satisfaction from that than I've had from all of mine put together.

On the other, I've had the experience of many different kinds of vessels, and sailing and restoring them led me into sailing and skippering square-riggers and experiencing ocean voyaging.

None of my restoration projects were carried out for profit – the man-hours involved wouldn't allow that – but inevitably the selling price of a restored yacht is usually more than the purchase price, so my sailing has cost me nothing more than time over the years, and I've been able to move easily between boats of varying quality and increasing size and value. Hopefully this latest one will last a bit longer; she has many good points, and there are only so many refits I can face. With retirement I hope to explore the French canals, which *Osprey*, though not ideal for that, would manage. So perhaps this is the end of the story. Or perhaps not. I've never owned a canal boat...

■ PBO articles mentioned can be bought from the Copy Service on tel: 01202 440823. 

Making a 2-in-1 table

**COST
£100**

Ian Royston constructs a new dual-purpose saloon and cockpit table

The saloon table for my Sadler 29 was too large (obstructing access, especially at night) and the cockpit also needed a table for cruising.

I unbolted the existing heavy drop-leaf table from the saloon floor and replaced it with a lightweight table top made in sapele which includes drop-leaf sides so it can be extended as needed. The table is supported on a pair of metal pedestal legs that fit into sockets recessed into the saloon floor. I've recessed a pair of identical sockets into the cockpit grating so the table and its legs can be easily lifted out from the saloon and transferred into the cockpit.



Removal of the table from the saloon companionway and storing it at night has greatly improved access to the double saloon berth. My tabletop could do with another



Ian Royston's table, with drop-leaf sides, fits into sockets in the cockpit grating, and identical sockets recessed into the saloon floor

couple of coats of Woodskin, which appears to scratch rather easily.

PBO has shown many ingenious designs of 'removable' cockpit tables over the years, but I don't

recall one which could double up as a saloon table. The cost of the raw materials was around £100 – a modest price for a full-size drop-leaf saloon and cockpit table.

Readers' Tips

TANKER TROLLEY

Way back in 2014, readers were writing about the problems of getting petrol for an outboard at marinas, and the fact that it's often a long walk to the nearest petrol station.

May I suggest people look out for a folding baggage trolley on which the outboard fuel tank could be wheeled (or find a tank which will fit on such a trolley)?

Having conveyed two fairly hefty bags around the Peloponnese and on many other trips, I know the one I have is very robust. What's more, it folds down to little more than 1½ft in length, as shown by the wooden 12in ruler in the photo.

It even comes supplied with bungees to keep the tank secure when wheeling. These trolleys are available new from as little as £10.

Peter Jones



**COST
AROUND
£10**

TOP TAP TIP

The cold water tap in the heads had stopped running. It opened readily enough, but nowt came through. It had been running thin progressively for a few weeks until it finally ground to a halt. Ah well, it would be a simple enough job to fix, I reasoned. I'd extract the bronze tap body, fit a new washer, repair or replace if necessary.

But would it budge? Not on your nelly. Without risking breaking the surrounding laminate, it was impossible to remove the body from the chrome tap casing.

Then I remembered the tin of PlusGas Formula 'A' dismantling lubricant that lurks

in a box in the bowels of the bilge. It's commonly used to free up rusted nuts, bolts and obstinate shackles. I soaked a piece of kitchen towel in PlusGas 'A', wrapped it around the tap, and left it overnight. Next morning, it still wouldn't budge. Crestfallen that I'd been defeated by a tap, I resigned myself to buying a whole new block.

Twenty-four hours later, however, the offending tap was showing signs of life.

Over the next couple of nights, with stopcock off and water pressure released, I dribbled the magic elixir down the tap spigot and into the body. Each day there was a marked improvement.

Coming unstuck with cork

It's try and try again as Peter Cobbold attempts to create a new cabin headlining

It was a misty day when I first saw the boat I was to end up buying, so when I became her owner I named her *Misty Lady*. She's a Cox 23 Mk3A, the last boat built by Cox Marine of Brightlingsea in 1988.

She'd been laid up for a couple of years and when I opened up the washboards I found most of the main cabin's headlining was a heap of junk on the cabin sole. No matter what I tried it would not adhere to the roof again.

My solution at the time was to buy a couple of packs of cork tiles and start again. Gluing up and cutting to size as I went I did a fair job, and it lasted well for the next 20 years.

Eventually, however, the tiles were losing their colour, becoming stained and rumped, so my winter project was to find an alternative material to replace the old tiles with nice white plastic ones.

The dry cork sheared off easily with a flat scraper, and I managed to remove most of the original glue.

The new plastic tiles were self-adhesive: it was such an

easy job that I got 10 tiles up in an afternoon.

The following day I went back to finish off, but opened the cabin doors to find 10 tiles staring up at me from the floor – the self-adhesive glue is obviously good enough to stick them to a floor, but not to overcome the force of gravity.

So, I started again with a tube of contact adhesive – and eventually they stayed put!

After a bit of shaping and cutting I glued up a number of small battens to hide a few of the joints and give a bit of character. Job done, and the result is a cabin that looks clean and light.

**COST
AROUND
£30**



After 20 years, the cork tiles had to go



TOP and ABOVE Two views of the shiny new headlining!



It helped to remove the spring clip as this enabled the spigot to be wound out much further, thereby facilitating deep penetration when it was turned back in again. The tap now runs like new.

The moral is that it can do no harm to dribble a dash of dismantling lubricant down a boat's tap spigots routinely at the end of each season once the water has been drained from the system. **Richard Hare**

LAGGED WIPERS

I was a little shocked when the rubber wiper blades perished on our new Hardy 42 after about eight months afloat, and gave some thought to a simple, elegant solution – but alas, the canvas window covers won't easily go over the wipers.

Pipe lagging fitted the bill – as cheap as chips, easy to work with, and matches the canvas work as well!

Jessica Garbett



Laura Hodgetts reports on the latest marine products



H-Vector Antenna with optional rail mount clamp

Conventional Navtex antennas respond to the electrical component associated with the Navtex radio signal. They usually perform well at sea where electrical interference is low but can sometimes be overwhelmed, especially when in harbour and connected to shore power. In most small craft the electrical system acts as an effective ground for the antenna, but it can also be a source of interference conducted from other electrical equipment on board. The omnidirectional H-Vector antenna is not sensitive to electric fields but to the magnetic component of the Navtex signal and, as it does not need a ground, it is not affected by conducted ground interference.

The claimed result is that, under adverse conditions, the H-Vector antenna can deliver a significant improvement to Navtex reception. The mushroom-shaped antenna is compatible with the Clipper Navtex, series 2 Target Navtex and with the Navtex engine. It can be mounted on a cabin roof or a rail, and costs £59. ■ www.nasamarine.com

Flexible Rope & Cord Brush

Simple to use, Shurhold Industries' Flexible Rope & Cord Brush is designed to clean 13-26mm diameter rope. It is suitable for dock lines and other tubular items such as rigging, hoses, power cables and railings. The brush, which floats if dropped in the water, is easy to clean, only requiring a quick rinse and air-dry. It should be stored out of direct sunlight. To use, owners should wrap it around the line to be cleaned with bristles facing the rope. They should hold it firmly to ensure complete contact around the line and scrub lengthwise to remove debris, dirt, mould and other contaminants. The material can also be soaked in cleaner prior to brushing. Priced at £10.95.

■ www.force4.co.uk



JustTeak cleaning system

JustTeak is a marine-grade teak deck and furniture cleaning system: the three-stage process is initiated with a Teak Cleaner that removes stains, greying surfaces and old coatings, followed by a Teak Brightener which rejuvenates the substrate. A water-repellent, stain-resistant Teak Sealer is then applied to ensure a resilient finish. The two preparative stages will remove the teak sealer when it is appropriate to reapply and repeat the process. The company's advice to boat owners is to apply twice a year for rougher outdoor conditions, or between one and two years for less harsh conditions. Both the JustTeak Cleaner 1L and Brightener 1L are £13.27 per litre, while the JustTeak Sealer 1L costs £44. ■ www.marineindustrial.co.uk



SeaPod

After 200 years of popular use, the old lifebuoy has a serious rival. The largest SeaPod in the range weighs less than 4kg, and is packed in a water-activated case the size of a rugby ball. When entering the water, the CO₂ system inflates the platform over an area of 12 sq ft. The low freeboard of 40mm is intended to allow any survivor to crawl onto the platform using the strategically-placed foot- and handholds, and there await rescue. The bright orange platform supports the bodies of the survivors out of the water, considerably reducing the effects of hypothermia. SOLAS-approved LED lighting is incorporated into the pod, and the deluxe version also carries a Sea Marshall MOB locator beacon. The SeaPod has two separate auto-inflatable chambers: even if one chamber is punctured, the design enables the other chamber to be manually further inflated to maintain optimum buoyancy. Prices: Mini: £399.99, 1.8m: £999.99, 3m: £1,299. ■ www.salvare.co.uk

Our pick of Imray's latest books



■ **The Cruising Almanac 2016:** Compiled by the Cruising Association and Imray, the almanac covers north-west Europe from the Shetlands and southern Norway to Gibraltar and West Ireland to the Baltic. Major revisions include improved coverage for the southern North Sea. The almanac comes with 2016 tide tables with data on 47 standard ports, and is also available as a series of Imray nautical apps for iPad users. **Price £35**



■ **Irish Sea Pilot:** This well-established pilot covers both sides of the Irish Sea from Milford Haven to Portpatrick, and Rathlin Island to Carnore Point. The sailing directions and descriptions, updated for this second edition, cover all the places that provide shelter. At the start of each chapter, useful coasting notes deal with some of the more difficult passages and tidal gateways. Essential information includes accessibility, tides and shelter, along with pilotage notes and full colour plans. This edition includes a new section on wind farms. **Price: £32.50**

■ **CCC Cruising Scotland – The Clyde to Cape Wrath:** The second edition of this lavishly-illustrated book has been designed as a companion to the Clyde Cruising Club's Sailing Directions and covers the Scottish west coast from the Clyde to Cape Wrath and all the outlying islands. **Price: £27.50**



■ **Islas Baleares:** Said to be the only fully comprehensive pilot guide in English to Spain's Balearic Islands, Islas Baleares – Ibiza, Formentera, Mallorca, Cabrera and Menorca – has been revised with updated plans and technical data and new photos, especially of anchorages where recent building developments have altered their character. **Price: £32.50** ■ www.imray.com



SeaSafe's I-Zip lifejacket

SeaSafe's I-Zip lifejacket range now has the option of LiveSaver – 3m of 3mm neon-coated Dyneema spliced into a loop with a triangle in one end. The other end is attached to the lifting becket in the lifejacket with a strap hitch knot. When the lifejacket inflates, the LiveSaver floats out onto the water and is easy for the rescuer to grab with the boathook. They can then secure the MOB to the boat while they set up their retrieval rig. The Dyneema is capable of lifting 1.5 tons.

Each I-Zip lifejacket has a removable front cover which can be interchanged, washed or easily updated. SeaSafe's bespoke service allows sailors to choose their own fabric, even an off-cut from a jacket or coat that's no longer worn, and send in the cloth to be made into the cover. The lifejackets are certified to 150N for the ISO 12402 standard, with an actual tested buoyancy of 170N, and are available with a range of options such as sprayhood, SOLAS light, lifejacket kill cord attachment, double crotch strap, retro-reflective tape and personalised embroidery. I-Zip leisure lifejackets are priced from £79.94.

■ www.seasafe.co.uk



RNLI Christmas cards

Buy your Christmas cards through the Royal National Lifeboat Institution (RNLI) shop and your festive greetings can help support the charity that saves lives at sea. The RNLI shop's range includes festive decorations, cards and gift wrap, homeware, children's toys, stocking fillers, games and gadgets, food hampers and more. The 'Leave the pies' Christmas cards are priced from £3.95 for a pack of 10, plus P&P.

■ www.RNLIshop.org

PBO cartoon mugs

Cartoonist Claudia Myatt has been bringing PBO's Dave Selby columns to life through comedy boating scenes for more than eight years. Now, for the first time, we're offering the amusing designs on mugs.

We've selected a dozen of the designs from our vast archive to feature on quality mugs, which all passed the chuckle test in the PBO office and at Claudia's studio in Waldringfield Boatyard. They're available now, just in time for Christmas! Claudia and her business partner Emma Barton also have an extensive range of mugs for sale featuring their many other illustrations, with the option for personalised mugs.

The PBO mugs are priced at £6.99 each.

■ www.gone-sailing.co.uk



Collari low-spill mug

Collari have taken a 'redesign of the wheel' approach to the humble ceramic mug, addressing the inherent shortcomings of heat loss, instability and spilling easily when moved. The aim of the low-spill mug, made in England from the 'highest quality china and earthenware' is to be much more practical, light and tactile – it's designed as an alternative to the plastic/metal insulated lidded mugs. The mug comes with a non-slip base which, when used on a boat, means wherever you put the mug it stays – it won't slide, spill or fall over. Priced from £20.

■ www.collaridesign.com

Verdict

For someone who manages to spill, knock over and break things on a daily basis (useful skills for a PBO gear tester!), this mug was a revelation. It's a me-proof mug, I'm very impressed. Recommended.

Ben Meakins

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Eberspächer cabin heater

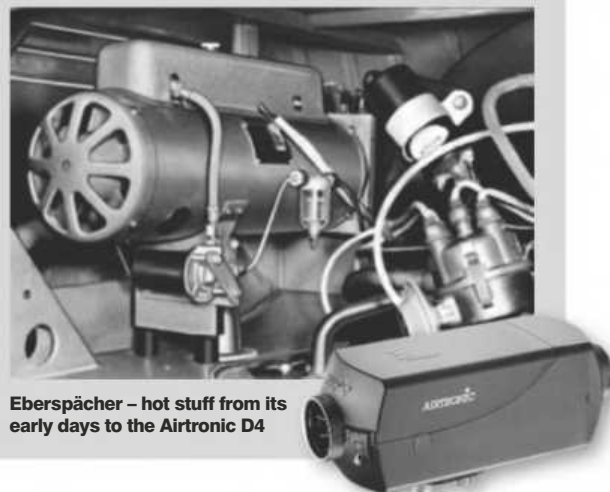
One of the best-known names in boat cabin heaters, Eberspächer's work on vehicle heating systems started in 1933. By 1953, combustion heaters were in series production at the Esslingen factory in Germany.

Towards the end of the 1970s, greater use of trucks with sleeper cabs suddenly created a huge market for Eberspächer diesel-fired heaters. At around the same time that heaters became popular in trucks, a new market opened up. More and more boat owners began to show an interest in the new level of comfort that a

diesel heater could offer them.

With Eberspächer already producing water heaters, it was only a matter of time before these were pressed into service for other applications. These compact water heaters opened up yet another new market being installed in narrowboats on the UK inland waterways, providing interior heating using conventional panel radiators and domestic hot water for showers and washing-up.

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Eberspächer – hot stuff from its early days to the Airtronic D4

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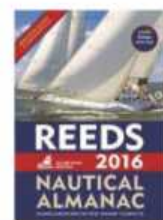
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DIY keel repair

SAVE MONEY

Faced with a potential £700 bill to repair a damaged keel, John Holloway did the job himself and carried out some modification work at the same time

Even the most careful skipper can occasionally be caught out by the unexpected.

After a fabulous three years away cruising, we were in Audierne, our favourite port in Brittany and a great departure place for the crossing back to Plymouth aboard our Heavenly Twins catamaran *Freya Frey*. We decided to dry out alongside the harbour wall and give the bottom a quick clean to make sure we made best speed on the 30-hour crossing.

The sun had set, and the tide was falling. As our keels neared the bottom, and while we were enjoying a cup of tea, we heard the throbbing rumble of big, rapidly-approaching diesel engines. A large motor vessel went past at speed, producing a massive breaking wash.

We bounced up and down on the granite bottom with tooth-jarring violence, and then there was a sickening, splintering crunch followed by the sound of running water. The full weight of the boat had come down on the leading edge of the port keel, and the laminate had failed.

There followed a frantic overnight search for baulks of timber to shore the boat up for a temporary repair.

Miraculously, I was able to seal the hull with Sikaflex to make her watertight in time for the rising



THE PROBLEM

With glassfibre ground away, the forward edge of the port keel shows a 250mm (10in) athwartships split

tide, but a permanent repair was obviously going to be needed.

A local GRP specialist quoted £700 to carry out the repairs and I agreed, leaving the boat with him over the winter. Five months later I returned, and was less than impressed to discover he had not even started the job – so I decided to tackle it myself.

The first task was to clean up the hull, grinding out all of the

damaged laminate, and keying the hull for the new laminate. The challenge was how to apply the new laminate upside down without it sagging.

I eventually decided to make up the laminate on the bench, and then apply it to the hull using a simple mould. The first stage was to make the mould, which was simply a piece of good strong cardboard from our local Lidl

store, covered with cling film.

I marked the contours of the hole on the cardboard and then cut glassfibre mat in decreasing sizes to follow the contours.

The next job was to mix the resin, for which I used a large blunted wood bit in the electric drill. This enabled really thorough mixing of the hardener, which is vital to ensure maximum consistent strength.



Repairing the split in the hull



1 The cardboard mould, with a cut-out for the keel and markings for the glass mat.



2 Sheets of matting, in descending sizes to fill the hole, ready for resin saturation.



3 Stirring resin and hardener with a power drill ensured thorough mixing of the two.

Once the resin was mixed, some was poured onto the mould, and then the largest sheet of glassfibre matting was placed on top of it. The resin was stippled into the glass with a brush to ensure thorough saturation with all air bubbles removed.

Once this was done, the next sheet was applied, using the contour lines as guidance, followed by more resin, and so on until the last sheet was thoroughly impregnated.

At this point the mould was applied firmly to the bottom of the hull and strapped tightly in place with gaffer tape.

Resin-soaked mat was then applied to the inside of the repair, this time starting with the smallest sheet and steadily increasing in size. Once this was done we celebrated our efforts with a glass of beer and left the repair to harden fully overnight.

Next day I sanded off the excess resin and examined the repair closely to confirm that there were no voids. Success! I was happy that the repair was as strong as it could be.

The whole area was then carefully shaped with an angle grinder and a 60-grit pad to create a fair surface.



4 Resin is poured onto the cling film-covered mould...



5 ... and the largest sheet of matting placed on top. The resin was stippled into the glass then more layers were added.



6 Several graduated layers were quickly built up until the last sheet was impregnated...



7 ... so the mould and laminate could be taped in place and more layers added inside the boat.



8 Here's how the repair looked after removal of the cardboard mould. After checking there were no voids, the rough edges were tidied up and smoothed over with an angle grinder.

Making a keel extension for extra strength

I was concerned that the rather sharp turn between the keel and the hull in the original design caused high stress in the area that had to be repaired, and pondered a long time on how to protect this area in the future.

I decided to construct a keel extension which would reinforce the area of the repair by spreading the stresses over a larger area of the hull. I used a polyurethane foam former made from rigid insulation board, and would lay up glassfibre around it before bonding it onto the hull.

The first job was to make a cardboard outline of the proposed

extension – I simply did this by eye.

I was concerned that the original profile exposed the leading edge of the keel to shear forces, which had caused the original failure. GRP is incredibly strong in simple compression, so I made a decision to change the angle of the leading edge of the keel, bringing it nearer to the vertical. When I was happy with the profile, I transferred it to the foam, and cut out the shape with a padsaw.

I used a short length of plastic domestic guttering as a mould to create the rounded shape for the leading edge of the keel. A generous quantity of glass/resin



1 Having drawn an outline, I cut the foam to shape...



2 ... then peeled off the aluminium foil covering.



6 An area of hull (much of it the repair patch) forward of the original keel has been keyed ready for bonding the keel extension in place.



9 Here's the full-length iroko keel shoe faired to shape and bonded into place with Sikaflex.

composite paste was put into the gutter, and then the leading edge of the foam former was carefully pressed into it, ensuring that an adequate thickness of composite was retained at all points. The edges of the composite were deliberately left ragged in order to offer a better key for subsequent layers of material.

The composite was then allowed to harden fully before being removed from the guttering mould.

I repeated the process – this time with square guttering – to form a solid base for the keel. The mouldings along the bottom and the leading edge protruded over the sides of the foam former by about half an inch, and these provided a reference for the layers of material which were then built up on the sides of the foam.

Shod with a shoe

Once the keel extension was firmly glued and laminated in place, the next step was to fit a new full-length keel shoe. A thick board of iroko hardwood was held in place with a jack and marked out using a felt-tip pen.

I cut the iroko to size with a handheld circular saw, tidied it up then bonded it to the bottom of the keel with a good bead of Sikaflex.

Detailed shaping was done with an angle grinder to get an exact match between the keel and the shoe before applying 100mm-wide woven glass tape soaked in resin over the joint between the keel and shoe. Six coats of International Gelshield epoxy coating went on next, followed by four coats of Coppercoat antifouling, and the last part of the

job prior to launching was to fit a rubber sole to the shoe to protect the wood from abrasion. I used self-adhesive 10mm-thick hard rubber tape, secured by copper nails. An important fact to note is that pure copper nails are too soft to be driven into hardwoods such as iroko and teak, so I drilled pilot holes first before hammering the nails into place.

Once the rubber was firmly attached, it was trimmed to size with a Stanley knife and the edge of the joint sealed with Sikaflex.

Repeat performance

Of course, this repair made quite a difference to the keel profile – and being a catamaran it was necessary to repeat the same job again on the other hull. It was lucky I did, because underneath the

antifouling I found a crack in the hull forward of the starboard keel – too small for noticeable water ingress, but a crack nonetheless. It was repaired in exactly the same way as the port hull.

Once all the work was finished the boat was lowered down onto her new keels, and the work inspected again for any signs of movement. All was well, so three weeks later she was launched and sea trials began.

I found the increased keel area made a very small reduction to the leeway, and the extension moved the centre of lateral resistance forward, which theoretically has produced a tiny increase in weather helm, although it is not noticeable. Neither of these is judged to adversely affect the boat's performance, however.



3 The curved front edge was moulded in home guttering.



4 As well as a curved leading edge, a square moulding has been joined on the bottom.



5 The encapsulated foam keel extension is now ready for attachment to the hull.



7 Glued on, filled and faired, the finished glassfibre work is now ready for marking out the new keel shoe.



8 An iroko plank is jacked into place so the keel shoe can be marked out ready for cutting to shape.



10 Rubber keel shoe protector is fixed with copper nails.



11 For a neat finish the rubber sole is trimmed to size with a sharp craft knife. Job done!

What it cost

I used about £300 worth of glassfibre and resin all told, plus £250 for the iroko and £70 for the rubber soles – not far short of the £700 I was quoted to carry out the original repair.

But bearing in mind that I actually carried out work on both hulls – and at the same time made a real belt-and-braces job of reinforcing the damaged area – there was a huge saving over what it would have cost to have the same work done in a yard.



Sharpening a traditional saw



David Parker finds a job where only a traditional saw will cut it. Here he shows how to keep an edge on an old and trusted tool

I had never come across a piece of timber that could just stop my circular bench saw before.

The timber in question was a plank of afromosia, described by some as 'African teak'.

It's a beautiful wood but the grain goes all over the place, and I had noticed some of the strips cupped after cutting them (ie bowed along their length). I was about halfway through the plank when the saw started to scream at an even higher pitch than normal, then appeared

to groan and stop while the 1,200W motor locked and hummed ominously. I hit the 'off' button and saw what had happened. This time, as the timber cupped midway along the plank, the two sides had locked together: the warping grain had put a vice-like grip on the saw blade, jamming it to a dead stop. I was quite awestruck by the strength of this timber and had to complete the job using wedges to keep the cut open.

But that wasn't the end of the story. I also wanted a large panel section to form part of a navigation locker: this would mean cutting a solid piece measuring roughly 12in x 14½in. The maximum depth of cut on my bench saw is 1½in, so this panel would have to be cut by hand. As I tried to cut this piece of afromosia in half along its length, I went through just about every saw I had. Hardpoint saws and so-called jet cut saws hardly seemed to touch it. Even my

biggest Japanese shark-tooth saw couldn't do it, and didn't have the blade rigidity or length to hold the cut line either.

Down from the shed wall came my father's old rip saw, which cut everything from logs to the blocks of wood he used for wood carving, and this was the only saw able to tackle the mighty afromosia effectively. You may also guess that it needed sharpening by the time I had finished, and here is how it's done.

Setting the teeth

Before sharpening a traditional saw the first thing you need to do is set the teeth, because for a saw to cut effectively its teeth must be set alternately to the left and right. The plier-type of saw sets provide an accurate way to do this.

Budget-type universal saws with polypropylene handles have hardpoint teeth, but they cannot be re-sharpened.

For the setting process, with the saw set adjusted appropriately, squeeze every other tooth to set it at the correct angle. Reverse the saw and repeat the operation on the other side. Two Somax sets (shown here) are available, one for fine-tooth saws with 12-26 teeth



per inch and the other for saws with 4-12 teeth per inch. To avoid breaking a saw tooth, ensure that you never set a saw in the opposite direction to which it was set before. Also, do not lever the teeth by moving the set or the saw while the plunger is in operation.



Keep saws protected if you don't want them to go blunt quickly. A disposable saw will usually have a plastic guard for the blade. For a traditional saw, you can make a simple guard using a length of timber with a longitudinal groove cut by the saw itself.

TIP



The sharpening process

For the sharpening process itself you need to be able to hold the edge of the blade rigid along its length. The easiest way to do this is to make a sawhorse jig to hold the blade.



These are fairly simple to make and require two lengths of timber to fashion a long saw clamp which can be held in a workbench. Note that a profile has been cut in each side to follow the shape of the saw handle where it sits in the jig.



Coach bolts and wing nuts are a quick way to secure the blade in the jig. The blade is held in position with only the teeth showing.



A slim triangular taper file is used to sharpen the saw. Place the file on the front edge of the first tooth set towards you, press down and push it across the tooth for a few strokes. File each alternate tooth on one side and then each alternate tooth on the reverse side. Typically, a rip saw is sharpened at 90° to the blade and a cross-cut saw at 60°.

Help for a heavy helm

If your boat has a new rig and new sails, but a tiller that still tries to wrench your arms out of their sockets, what do you do? David Harding investigates the problem on a 33ft steel sloop

A heavy helm can take the fun out of sailing. It makes life tiring and, more often than not on a modern yacht, it's a sign that something's wrong.

If your yacht happens to be a 33-footer by Van de Stadt, you would expect her to be both nicely balanced and light on the helm –

but that's not what Catherine and Alex Nancekieveill found with their forerunner of the Marsdiep class. They bought *Fosca Helena* as little more than an unloved steel shell built in the early 1960s and spent seven years restoring her, during which time they had two children and even sold their house so they could continue the project. Then they put her in the water and



Tiller steering should be fine on a boat of this size, but *Fosca Helena* can soon become tiring at the helm

started sailing – only to discover that she could be seriously hard-nosed.

As Catherine explains, 'the problem is balancing the boat when the wind is on or abaft the beam. The helm becomes very heavy, and as she has a tiller this quickly becomes tiring. We haven't sailed in any really heavy weather, but I worry that it could be a problem if we get caught out.'

With a young family, and an autopilot yet to be fitted, Catherine and Alex really need to make life as easy for themselves as possible: having to play tug-of-war with the tiller is not helpful.

As part of the restoration they fitted a new Z-Spars mast, new standing rigging and a new mainsail and roller genoa from Dolphin Sails. They have also covered a few miles between them, and it became apparent from our early discussions that 'operator error' was unlikely to be a major factor in this case. So what could the problem be?



Looking for clues

Catherine mentioned that the design drawings supplied with the boat when they bought her showed that she had been modified by the designer. The copies she sent confirmed that the counter stern had been shortened, the centreplate removed and the keel made deeper by a foot or so instead.

A second mast step position had also been added –

presumably to compensate for the change to the underwater profile – and Catherine had been unsure which to use. She chose the forward one, though there were only a few inches between them.

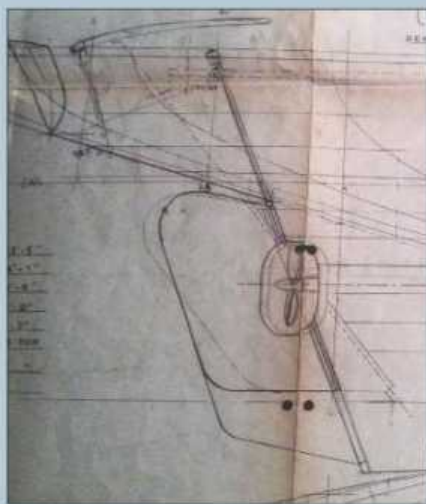
Another change was that the rudder, hung on the aft end of the keel, had been brought closer to the vertical. This should make it lighter and more

efficient, but the blade itself was still massive and without any balance. It was connected to the tiller by means of a drag-link, to move the tiller abaft the rudder head and create more space in the cockpit.

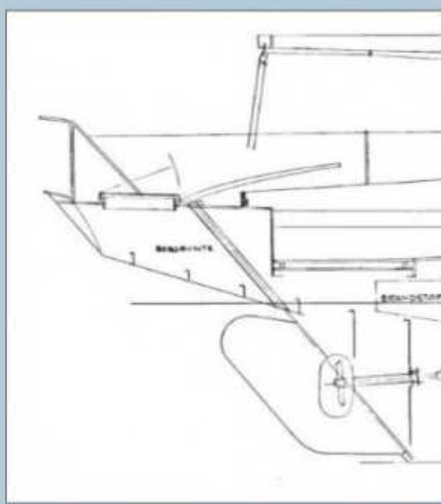
On seeing the drawings, my suspicions immediately focused on the rudder. A blade this big, without balance and controlled by a tiller, would probably feel

heavy no matter what. Even if the boat were well balanced, such a blade would take some turning. Other factors might be contributing to *Fosca Helena*'s heavy helm, but a well-balanced boat can still be a handful if the rudder lacks balance.

An imperfectly balanced boat with an unbalanced rudder will be even harder.



These drawings are dated before those of the production Marsdiep, suggesting that *Fosca Helena* was a prototype design



This is the later Marsdiep, with a centreplate, a longer counter stern and the rudder stock angled further aft



No wonder it's heavy: an unbalanced rudder like this won't make life easy

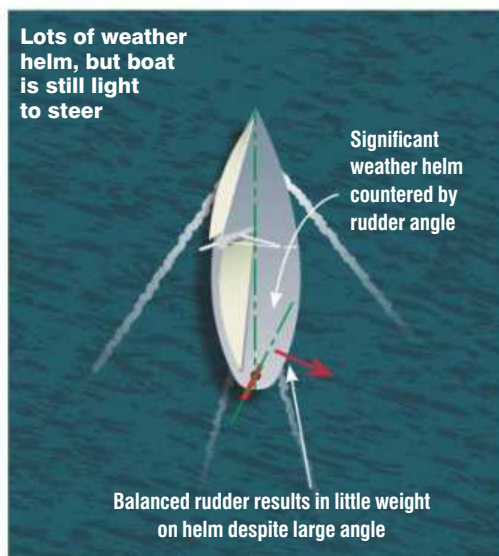
Boat balance and rudder balance

Boat balance and rudder balance are often confused – and the latter is not widely understood – so let's have a look at each of them and how they interact

Essentially, the boat's balance means what she would do on any given point of sail if the helm were fixed amidships. If she rounds up, it's weather helm. If she bears away, it's lee helm. You can, however, have a boat whose pronounced tendency to round up is countered by a well-balanced rudder blade. In such a situation you would have the tiller well to windward (or several spokes down on the wheel) but the helm wouldn't feel heavy even though the rudder was being dragged through the water at a substantial angle and might be close to losing grip.

By contrast, a boat might have minimal weather helm – calling for only a few degrees of rudder angle to keep her on track – but an unbalanced rudder making the helm heavy. In this latter instance people often say 'my boat carries

Lots of weather helm, but boat is still light to steer



a lot of weather helm' – but they're confusing boat balance with helm balance.

Little weather helm, but boat is heavy to steer



Balancing a blade

Designing a rudder with just the right amount of balance is still

something of a black art despite all the science. Even reputable designers don't always get it right.

Disregarding mechanical friction, the effort needed to turn a rudder blade is fundamentally a factor of the distance between its pivot point and its pressure point. The pivot point is a continuation of the line of the rudder stock, or the pintles and gudgeons if it's hung on the keel or transom. That leaves the pressure point, which is approximately 25% of the way aft from the blade's leading edge.

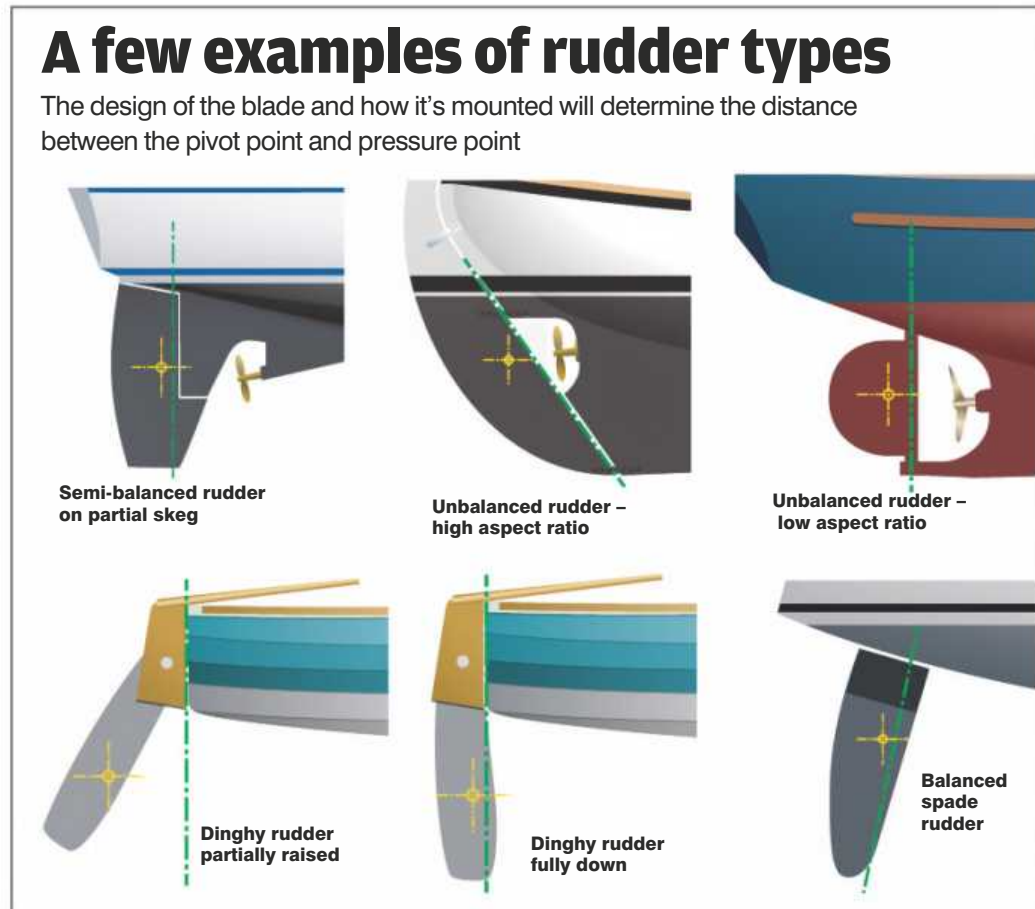
The pressure point needs to be abaft the pivot point to create some feel on the helm. Without any load transmitted through the tiller or wheel, you would find it difficult to gauge how hard you're pressing the boat. You might suddenly find the rudder losing grip with no any obvious warning. Some boats have rudders like this and you have to be highly sensitive to signs that they're about to broach. You normally expect the helm to load up first.

If the pressure point is too far abaft the pivot point, on the other hand, the result is an uncomfortably heavy helm. It's like steering with an oar. The other extreme – thankfully – is encountered only rarely: an over-balanced blade, where the pressure point is forward of the pivot. In these instances the blade will slam across as soon as it's turned even slightly one way or the other. That's what happens when you're manoeuvring in astern under power: if you don't grip the tiller or wheel tightly, the rudder takes control. Over-balancing is the last thing you want – it's potentially dangerous.

By and large, designers err on the side of under-balancing for safety reasons. They also have to be mindful of the fact that the pressure point moves forward as speed increases. The last thing you want is for the boat to launch itself down the front of a wave and the helm suddenly to fly hard over. That could be messy.

When a rudder is on a full-length skeg, there's no scope for balance. Options are also limited when it's on the end of the keel. Such rudders will be heavier, especially those of low aspect ratio. The higher the aspect ratio for any given area, the smaller the distance between the pivot and the pressure point and the lighter the helm.

Dinghy sailors with pivoting blades will know instantly if their rudder isn't fully down because the helm will become heavy. Some vertically-lifting rudders also provide scope to angle the blade forward or aft. Just



wedging the head of the blade to move it aft by a fraction of an inch can bring the bottom far enough forward to transform the balance.

Balance in practice

With *Fosca Helena*, the only way to develop our thoughts any further was to go for a sail. She was based on the Orwell, but we met in Harwich for logistical simplicity and to allow us to head straight out into open water.

I drove east not knowing



Off the wind the long boom moves the rig's centre of effort well to leeward, contributing to the rounding-up moment

whether there was anything we would be able to do on the day to reduce the extent of the problem, let alone resolve it. Here was a boat of first-class pedigree, sailed by people who clearly understood more than many owners about what makes a boat tick, and on which the rig and sails were less than two years old.

I had spoken to Dolphin to confirm the specification of the mast and sails, made contact with the Van de Stadt office, who were very helpful, and looked at the drawings. The new rigging would have stretched and, if it hadn't been re-tensioned, might be a contributory factor. Otherwise, the finger of suspicion still pointed at the rudder.

When we met in Harwich, Alex stepped off the boat with the children for a day of shoreside activities while Catherine and I went sailing to see what we could find.

On taking the tiller as we motored out, I found that the helm was indeed heavy. The barn door hanging on the keel took some turning even without any influence from wind, waves or heel. Once in clear water, we found conditions that could hardly have been better. An easterly breeze of 12-15 knots

was kicking up a moderate sea and getting *Fosca Helena* nicely powered up on the wind. Another few knots would have been a stiffer test, but this was fine – and quite enough when it came to taking photos from an inflatable tender that wasn't much longer than my lenses.

The helm was exactly as all the evidence had suggested it would be. When properly trimmed upwind, *Fosca Helena* was naturally inclined to go in a straight line and needed little help from the tiller. When the sheets were eased, moving the rig's centre of effort substantially to leeward of the centre of buoyancy and centre of gravity to induce a turning moment, she naturally exhibited a tendency to round up. That's to be expected: almost any boat will carry more weather helm on a reach. This inclination was only modest, but manifested itself in a heavy helm because of the unbalanced rudder. Even in those relatively gentle conditions, sailing on a broad reach with the waves on the quarter called for more effort than would have been comfortable for any time. In 25 knots and heavy seas I suspect it would take all the effort even a muscular helmsman or helmswoman could muster.



Refining the rig

Given the lack of scope for doing anything about the rudder there and then, it was a matter of seeing whether we could make any tweaks to improve the boat's balance and reduce what little weather helm there was. Even a slight reduction in rounding-up tendency would make life easier.

As I had suspected, the rigging was far too slack – not because it had stretched, but because the yard that un-steps the mast at the end of each season and re-steps it in the spring had never tensioned it in the first place. It's by no means uncommon for a yard to do up the rigging simply so the mast won't fall over, leaving any further tensioning and tuning for the owners to do themselves or arrange with a rigger. Unless told otherwise, owners tend to assume that, when a yard has stepped the mast, it's ready to go. Often it's not.

Rigs like those on *Fosca Helena* – traditional 'four square' masthead rigs with tree trunks for masts – aren't going to fall over in a hurry because they're inherently so simple and robust. They're much less tweaky and sensitive to tuning than a typical fractional rig, but still need to be tensioned properly both for safety and to allow the boat to perform to her potential. Otherwise it's the sailing equivalent of driving on flat tyres.



If you can do this with the leeward cap shroud...



...or if it looks like this, the rig needs tensioning

Lateral stiffness

Lateral stiffness is important with any rig, and as the leeward cap was waving around in the breeze we took about half a dozen full turns on each bottlescrew.

However, it was tensioning the backstay that made the biggest difference to the sails because the sag in the forestay had led to excessive fullness in the genoa. A sail that's too full means more heel, more drag, less speed and more weight on the helm. It's important to bear in mind that a heavy boat with a masthead rig like *Fosca Helena* will need fuller sails and less rig tension than a lighter, fractionally-rigged alternative, but floppy rigging and baggy sails are performance-killers regardless.



Here the slack rigging leads to a genoa that's far too full. It's not sheeted in hard enough either



More rig tension flattens the genoa, which is also sheeted in harder to good effect

Flattening the mainsail

One way to help control the weight of the helm off the wind would be to reduce the power in the large, low-aspect-ratio mainsail. Catherine says she has often resorted to reefing even in moderate conditions.

We made several refinements and looked at ways of improving matters further. These included increasing the power of the clew outhaul (which had no purchase) and making it easier – or even possible – to tension both the outhaul and the reefing pennants. All emerged at the forward end of the boom, where they were jammed by fiddly-to-operate clutches and had no direct lead to a winch.

The position of the reefing pennants at the other end of the boom was something we could change. They were too far forward and, therefore, not pulling the leech far enough aft, so we re-rove the first one abaft the mainsheet attachment to illustrate the difference.



The first reef pennant was too far forward...



We moved it aft and looped it around the boom to save using the D-ring



...and not exerting enough pull aft to flatten the sail



The realigned pull results in a flatter sail, which can always be made fuller for more power if necessary

Back to the rudder

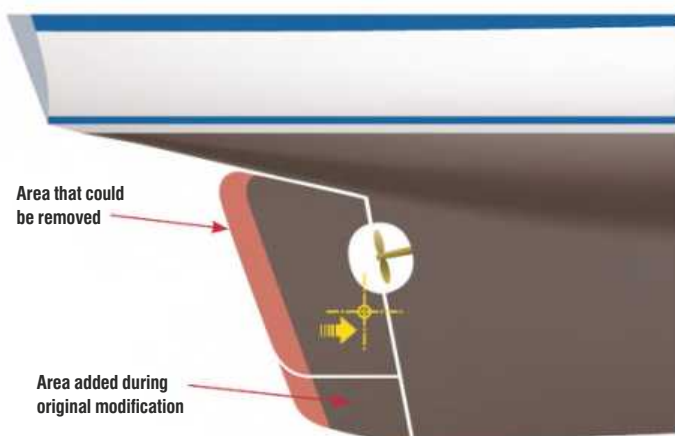
Since the existing rudder will always present a problem regardless of what's done to the rig, changes below the waterline are the only way to achieve balance in this case.

The rudder was made deeper when the keel was extended, so its area is greater than the original. On that basis, the equivalent area could be taken off the aft edge to move the pressure point forward and create a blade of higher aspect ratio. A more radical solution would be to remove the existing rudder and start again with a new semi-balanced blade further aft on a partial skeg and

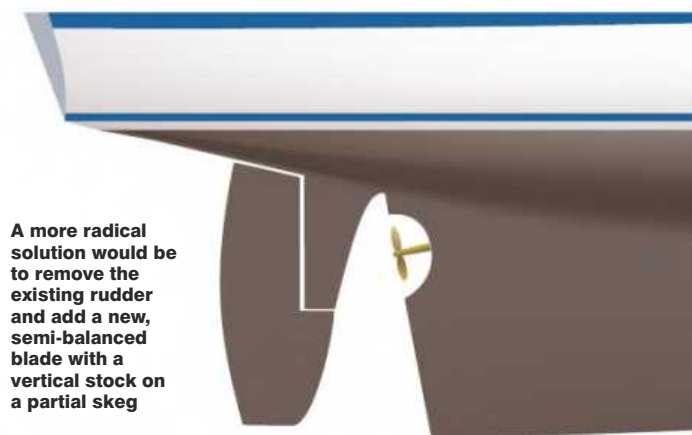
with a vertical stock. The closer the stock is to vertical the better the blade works and the lighter the helm. An arrangement like this would be vastly more efficient.

Being made of steel, *Fosca Helena* lends herself to this sort of treatment: mechanically it should be relatively straightforward.

Converting to wheel steering, even if it were possible, would not be the answer. Using mechanical advantage to disguise a lack of balance would leave the fundamental issue unresolved, and the gearing would have to be so low as to call for a lot of wheel-spinning.



Removing area from the trailing edge of the rudder equivalent to that added to the bottom when the keel was made deeper would move the pressure point forward to make the helm lighter



PBO conclusion

If a boat and her rudder are such that she can be trimmed to be light on the helm, it principally comes down to how the rig and sails are set up. In this case, more fundamental changes are needed, but they have the potential to transform the boat.

■ Thanks to the pier master of Harwich Haven Authority for help with arrangements in Harwich and the use of the Halfpenny Pier.



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11 pairs of thermal waterproof gloves



These thermal waterproof gloves are designed to keep you warm and dry in all weathers. But can you carry out simple tasks while wearing them? Laura Hodgetts and a PBO test team get their skates on to find out

Unless you're Sir Robin Knox-Johnston, who once told PBO he never wears gloves as he prefers to brave the elements and ensure maximum grip on the lines, thermal waterproof gloves are a good option for a comfortable sail.

But which to buy? The market ranges from sleek knitted varieties to chunky insulated options, offering short and long cuffs as well as thermal but non-waterproof neoprene gloves. We gathered 11 different varieties together – plus two pairs of Marigolds for comparison – and set off for The Ark, a real ice rink in Poole Park, Dorset. Our testers got their skates on to whip up some ice, which was then swept up for our tests. To compare the gloves' dexterity we tied knots, fastened a lifejacket buckle and attempted basic tasks on smartphone touch-screens. We tested how easy the gloves were to pull on and off with wet hands, and whether they kept hands dry after two minutes plunged into an icy bucket of water. To test insulation properties, we tucked similarly-sized ice cubes into the index finger of each glove and timed how long they took to melt. We also timed an ice cube melting at room temperature – it takes longer than you might imagine! We then repeated many tasks in the office to counteract the issue of testers becoming increasingly dexterous with repetition. For example, Marco's lifejacket buckle fastening time averaged 2.5 seconds, but after completing this task a dozen times he achieved a personal best with the Marigolds! Similarly, Jack's bowline knot-tying time was initially 4.5 seconds without gloves, but after completing a dozen knots with gloves on his non-gloved hand had reduced to 3.4 seconds. As a comparison, Ben's bowline took an average of 3 seconds without gloves.

All the gloves were subjected to the following tests...



Grip power pull test



Ice cube melt time



Knot-tying challenge



Water bucket plunge

THE PBO TEST TEAM



News editor Laura Hodgetts has completed the RYA Day Skipper Practical course and has RYA qualifications in dinghy sailing and powerboating.



Deputy editor Ben Meakins co-owns *Polly*, an Impala 28, moored on the River Hamble. Ben sails throughout the winter.



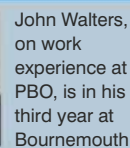
Deputy editor Ben Meakins co-owns *Polly*, an Impala 28, moored on the River Hamble. Ben sails throughout the winter.



Laura's brother, Jack Kitching, is a qualified chief officer in the merchant navy, currently working on the Liverpool to Dublin ferry.



Production editor Marco Rossi grew up in Greenock, Scotland and as such is a connoisseur of thermal clothing.



John Walters, on work experience at PBO, is in his third year at Bournemouth University studying BA (Hons) Multimedia Journalism.

DexShell Alpine Contrast gloves

PRICE: £29.95

Contact: www.dexshell.co.uk



Designed to be seamless, waterproof and breathable, these gloves are close-fitting and flexible with a 'thermal performance inner'. Features include elongated grip dotting on the palm for grip control. The outer shell is made from 88% nylon, 2% spandex and 10% elastics.

The interlining has 'waterproof, breathable Porelle membranes', the inner glove is 90% acrylic and 10% nylon. Sizes: S to L.

ON TEST: Our testers loved the unrestrictive feel of the sleek, knitted design. Marco said: 'I wasn't expecting these to be waterproof: they look like a jumper my mum had in the '70s'. Jack said: 'They fit nicely: they're quite thin around the fingers and feel like normal woollen gloves.' However, he added: 'I probably wouldn't wear them to work – they're not very manly.'

LIFEJACKET BUCKLE: 6 seconds (John), 3.8 seconds (Marco)

KNOTS: Test 1: Ben tied a bowline in 6.45 seconds. Test 2: Jack took 4.5 seconds on both attempts to tie the bowline, saying 'there's no resistance in the finger movement, you can feel everything'.

GRIP: Good grip thanks to elongated grip dotting in alternate directions.

ICE WATER BUCKET: Test 1: 'Bone-dry, comfortable as you like'.

Test 2: The left glove stayed nice and dry, but the right glove leaked through the little finger, making the glove feel cold and damp inside.

ICE CUBE MELT TIME: 2 hours, 35 mins, 4 secs.

VERDICT: A favourite of Marco and Jack (before the leak). This glove offered style, dexterity and a good grip: however, it was less insulated than some other gloves on test. ■ DexShell has a 24-month satisfaction guarantee for all its waterproof socks and gloves.

DexShell Waterproof ThermFit gloves

PRICE: £34.99

Contact: www.dexshell.co.uk



Seamless, waterproof, breathable and close-fitting gloves, constructed with a merino wool inner liner with naturally moisture-absorbing and antibacterial properties. Features include grip dotting on the palm for extra grip power and control. The outer shell is made from 84% nylon, 2% elastane and 14% elastics. There's an interlining with waterproof, breathable Porelle

membranes. The inner glove is made from 37% merino wool, 37% acrylic, 18% nylon and 8% elastics. Sizes: S to L.

ON TEST: Very similar in style to the Sealskinz Ultra Grip. Jack noted that the fingers fit well, but the wrist is much wider and a little saggy where the wrist meets the hand – perhaps for pulling over cuffs? These pulled on and off easily with wet hands.

LIFEJACKET BUCKLE: An average of 4.9 seconds (Marco)

KNOTS: Test 2: Jack tied the bowline in 4.7 and 4.5 seconds, saying: 'These feel really good, really dexterous. They feel just like wearing normal, non-thermal woollen gloves – no resistance'.

GRIP: Quite slippery, not as good as the Alpine Contrast which features alternating lined patterns rather than the Thermfit's dots.

ICE WATER BUCKET: Felt cold, but remained totally dry the whole time. Very comfortable.

ICE CUBE MELT TIME: 2 hours, 58 mins, 14 secs

VERDICT: Comfortable and waterproof; thicker and warmer than the Alpine Contrast gloves, just not as warm, or as grippy as some of the other gloves on test.

Gill Helmsman gloves

PRICE: £45

Contact: www.gillmarine.com/gb/



A versatile, all-weather performance glove that is waterproof, windproof and breathable. The protective softshell construction is flexible and comfortable. The

layered construction includes a waterproof and breathable insert, warm synthetic insulation and Dura-Grip palm protection. Sizes: XS to XXL.

ON TEST: Our testers noted the immediate warmth offered by these sturdy gloves. Jack said: 'You can't feel what's going on with your fingertips, there's a lot of padding. They're ideal for cold conditions. They feel like they're really good quality.'

LIFEJACKET BUCKLE: 5.03 seconds (Marco).

KNOTS: Test 1: Ben could tie a bowline, but not particularly easily – it took 11 seconds. Test 2: Jack took 6.4 and 8.5 seconds, saying: 'It's very tricky, I can't feel what I'm doing.'

GRIP: Seams and perforated fabric offer a great grip.

ICE WATER BUCKET: No sensation of cold whatsoever. 'A pleasure to wear them in ice water.'

ICE CUBE MELT TIME: 3 hours, 5 mins, 10 secs.

VERDICT: Despite not dominating the ice cube test, these felt like the thickest, warmest gloves on test. They felt of slightly lesser quality than the Musto Performance Gore-Tex gloves. Comfortable with a strong grip, but unsuitable for close work.

Helly Hansen WP Winter gloves

PRICE: £55

Contact: www.shop.hellyhansen.com



These gloves feature insulation, a waterproof construction and durable grip materials. The Helly Tech Protection fabric is designed to be fully seam-sealed, waterproof, windproof and breathable. Other features include a waterproof membrane insert; PrimaLoft Gold insulation; an adjustable gaiter; reinforced grips on palm and fingertips, and an elastic wrist. Sizes: S to L (women), M to XL (men).

ON TEST: We tested both men's and women's versions in medium. Testers were immediately impressed with the comfort offered. Ben said: 'Good glove; the fingers are really well sewn in.'

LIFEJACKET BUCKLE: 6.9 seconds (John), 4.9 seconds (Marco).

KNOTS: Test 1: Ben's bowline took 9.5 seconds. Test 2: Jack's: 6.5 and 6.2 seconds.

GRIP: 'Rubbery' perforated fabric grips well, slightly grippier than the Gill Helmsman.

ICE WATER BUCKET: Test 1: After one minute the forefinger in the men's gloves started leaking; after two minutes the area from the thumb across the palm was leaking. Meanwhile, the women's pair stayed bone-dry. Test 2: These felt 'perfect – warm and dry' until the testers clenched their fists and small leaks occurred through the seams in both the men's and women's versions.

ICE CUBE MELT TIME: 4 hours, 42 mins, 10 sec (women's); 4 hours, 32 mins, 03 secs (men's).

VERDICT: Very comfortable, and no major loss of dexterity despite the warmth. However, the waterproof capabilities failed during both bucket tests.

■ Helly Hansen technical outerwear garments are covered by a one-year warranty from purchase against defects in materials and workmanship.

Sealskinz Dragon Eye glove

PRICE: £38

Contact: www.sealskinz.com



Sealskinz's best-selling, low-profile, close-fitting, hard-wearing glove, designed to be waterproof, breathable and windproof. There's anti-slip to improve dexterity and stitching at the end of each finger to eliminate pull-out. The index finger and thumb are designed to work on touch-screen devices. The outer lining is 47% polyester, 27% nylon, 18% PU, 7% neoprene and 1% spandex, there's a 'micro-porous membrane' and 100% polyester inner lining. Sizes: S to XL.

ON TEST: Great first impression, Jack said: 'They're really nicely made and feel like suede, with quality stitching and detailing. They're warm and feel hard-wearing and are easy to get on and off with wet hands.'

LIFEJACKET BUCKLE: 3.68 and 4.3 seconds (Marco).

KNOTS: Test 1: Ben tied a bowline in 5 seconds, saying 'these are very good'. Test 2: Jack tied a bowline in 6.8 seconds and 7 seconds, saying: 'These seem more difficult than the Sealskinz Ultra Grip because you don't have the feeling'.

GRIP: Our testers found there was not much grip when wet.

ICE WATER BUCKET: Test one: no problem at all. Marco said: 'These feel fine, extremely comfortable'. In test two, however, there was 'definite tiny ingress of water in the little finger – damp and spreading – after one minute in the water. Apart from that, they feel warm.'

ICE CUBE MELT TIME: 4 hours, 14 mins, 10 sec.

VERDICT: A quality glove that surprised us by leaking in the second bucket test. That apart, they felt comfortable but weren't as dexterous as some of the other gloves on test. ■ Sealskinz guarantee all of its products to be 100% waterproof when produced and will replace items with a manufacturing defect.

Peter Storm Active Waterproof glove

PRICE: £25 BUT ON SALE FOR £15

Contact: www.millets.co.uk



Peter Storm's men's Active Waterproof gloves feature a performance-fit Thinsulate lining and palm grip. There's a pairing clip to keep both gloves together when not in use.

Sizes: M to XL.
ON TEST: Really light, good grip,

very warm and soft on the inside, nice details.

LIFEJACKET BUCKLE: Marco fastened the buckle in 10 seconds, and said: 'When wet, these gloves are tricky to use'.

KNOTS: Test 1: Ben tied a bowline in 7 seconds. Test 2: Jack tied a bowline in 6.2 and 5.5 seconds, and said: 'These are quite long on the fingers for me: if they were the right size they would be really responsive.'

GRIP: 'Really grippy, like a Spider-Man glove.' The large, shiny, circular grip dotting is almost sticky to touch.

ICE WATER BUCKET: Slight leakage before the two minutes was up, and a tiny leak by the thumb, making it quite cold along the seam.

ICE CUBE MELT TIME: 3 hours, 2 mins, 18 secs.

VERDICT: Comfortable and well insulated, with a good grip and dexterity. However, they leaked during our bucket test.

Henri Lloyd Cobra Winter glove

PRICE: £30

Contact: www.henrilloyd.com



These winter gloves from Henri Lloyd deliberately let water in, like a wetsuit, to create a warm layer of water between your skin and the glove to keep hands nice and warm in wet conditions. They feature a Maxigrip palm material coupled with neoprene for added thermal insulation,

and are articulated for ease of movement. Sizes: XS to XXL.

ON TEST: Our testers loved the look of these stylish gloves but found them to be uncomfortable when dry as you can feel all the seams. The extra long cuff made the gloves feel cosy.

LIFEJACKET BUCKLE: 5 seconds (John).

KNOTS: Test 2: 4.8 seconds and 5.4 seconds were achieved.

GRIP: The scored palm gave an excellent grip.

ICE WATER BUCKET: Initially very cold as expected, the gloves soon soaked up the cold water. When our testers moved their hands around, the gloves started to warm up. Jack tested these at the same time as the Musto Performance Winter Gloves and found that the Musto gloves recycled the cold water due to shorter wrists and a deliberate hole by the thumb, while the Henri Lloyds became 'fairly pleasant' after about one minute 30 seconds. The Mustos didn't warm up.

ICE CUBE MELT TIME: Two hours, 49 mins, 48 secs.

VERDICT: Designed for dinghy sailors who are expecting a thorough soaking, they offer great grip and warmth – following the initial cold spell. More comfortable than the Musto gloves tested, but less comfortable than the waterproof gloves tested.

Musto Performance gloves

PRICE: £35

Contact: www.musto.com



Flexible neoprene gloves designed for cold-weather sailing. Double-thickness neoprene on the back of the hand and wrist is promised to maintain warmth by trapping a thin layer of water next to your skin, like a wetsuit. The high-grip palm, constructed in Clarino PU fabric, is more durable, lighter and three times stronger than real leather and stays supple even after drying. The fingers are also pre-curved for extra comfort and dexterity. Sizes: XS to XXL.

ON TEST: Our testers liked the style of these gloves but found that they felt quite stiff and uncomfortable compared to the other gloves on test.

LIFEJACKET BUCKLE: 3.87 and 4.02 seconds (John).

KNOTS: Test 2: Jack achieved times of 5.7 and 6.7 seconds: 'They're ok, but a bit stiff: it's the stiffness that holds me back rather than not being able to feel'.

GRIP: A good grip, although not as good as the Henri Lloyd.

ICE WATER BUCKET: Test 1: Lets the water in after 10 seconds, starting to warm up after 2 minutes. The Henri Lloyds got warmer more quickly. Test 2: These did not impress our testers as a hole by the thumb and the short cuff allowed water to recycle and prevented it from warming up.

ICE CUBE MELT TIME: 3 hours, 12 mins, 1 sec.

VERDICT: Like the Henri Lloyds on test, these are great for wet conditions in which you cannot expect to stay dry – such as dinghy racing. They were not as comfortable as the insulated waterproof gloves on test but offered a good grip and dexterity despite their stiffness.

Peter Storm microfibre waterproof glove

PRICE: £20 BUT ON SALE FOR £10

Contact: www.millets.co.uk



These men's microfibre gloves from Peter Storm are designed with a waterproof membrane and Thinsulate lining for warmth. The synthetic palm is 'durable and aids grip', while there's an adjustable Velcro strap at the cuffs to lock in warmth, plus a pairing clip to prevent separation when not in use. Sizes: M to XL.

ON TEST: The cheapest thermal gloves on test. Really soft and floppy, very light for their size. The Gill Helmsman and Musto Gore-Tex felt a lot heavier and more

hard-wearing. These are made of quite a thin material. 'Annoying to get on with wet hands: the lining and the fingers don't match up very well'.

LIFEJACKET BUCKLE: 4.65 seconds (John): 'They're quite fumbly.'

KNOTS: Test 1: Ben tied a bowline in 8 seconds and said: 'the little finger is too small for me.' Test 2: Jack tied a bowline in 5.9 seconds, and said: 'It has quite thin padding, I can feel the rope. I do wonder if this thin material would soon rip though.'

GRIP: Not a bad grip; as good as the Gill gloves.

ICE WATER BUCKET: In both tests, our testers found these gloves to be: 'not waterproof at all, they instantly filled up with ice water.'

ICE CUBE MELT TIME: 4 hours, 50 mins, 14 secs – the top performer!

VERDICT: By far the least waterproof gloves on test, they demonstrated zero waterproofing capability. However, they were comfortable when dry and offered the best performance in the ice cube melt test.

Sealskinz Ultra Grip Touch Screen glove

PRICE: £37

Contact: www.sealskinz.com



Totally waterproof, windproof and breathable, these close-fitting stretch-knit gloves incorporate touch-screen-friendly tabs. A dotted palm and fingers is designed to give excellent grip. The outer shell is 95.5% nylon, 3.5% elastane and 1.5% silver filament. There's a 'hydrophilic membrane' and an inner lining made from 84% merino wool, 14% nylon and 2% elastane. Sizes: S to XL, available in colours including high-visibility yellow.

ON TEST: Our testers liked the long cuffs and sleek design.

LIFEJACKET BUCKLE: Test 1: Marco fastened the buckle in 4.30 seconds, and said: 'It felt ok, it was more my fumbling that took time. The gloves felt quite pudgy at the ends, but you can feel everything'.

KNOTS: Test 1: Ben tied a bowline in 5 seconds, saying: 'These are really good, very comfy'. Test 2: Jack initially took 6.3 seconds to tie the knot, but this later reduced to 4 seconds. He said: 'There's not much difference between having them on and not having them on.'

GRIP: Like the DexShell Alpine Contrast, these feature elongated dotting. Ben thought the Sealskinz Ultra Grip had the edge.

ICE WATER BUCKET: Our testers could feel the temperature change, but said: 'It's not uncomfortable'. There were no leaks at all. Marco said: 'Terrific: dry and warm with plenty of flexibility.'

ICE CUBE MELT TIME: 3 hours, 18 mins, 45 secs.

VERDICT: Comfy, warm and dry, with good dexterity.

Musto Performance Gore-Tex

PRICE: £99.99

Contact: www.musto.com



The most expensive gloves on test, these light but heavy-duty offerings have a breathable, waterproof Gore-Tex insert. The breathable Clarino palm is promised to be three times stronger, lighter and more durable than real leather and stays supple even after drying. The fingers are articulated for dexterity, and are heavily reinforced. The double-secured wrist has an adjustable strap for a secure fit and to prevent water ingress. A secondary, adjustable shock cord cinches the glove over your mid-layers. Sizes: XS to XL.

ON TEST: Our testers liked the

light weight of these gloves.

They're stylish, and the loop on the cuffs makes them very easy to get on and off with wet hands.

LIFEJACKET BUCKLE: 3.8 seconds (Marco).

KNOTS: Ben tied a bowline in 7.44 seconds, saying: 'They're ok, relatively dexterous.'

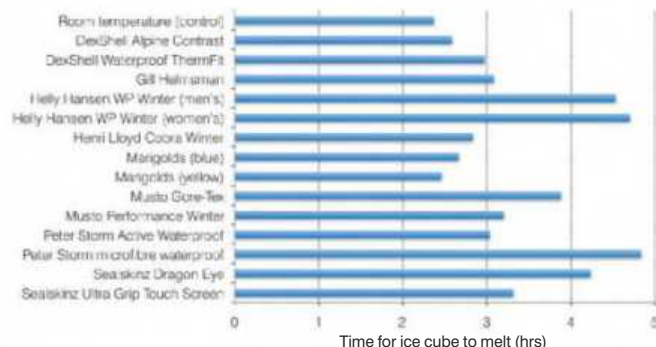
GRIP: A great grip thanks to the 'rubbery' palm and perforated seam stitching. Ben preferred the grip of this sleek design to the thicker Gill Helmsman gloves.

ICE WATER BUCKET: These sturdy gloves breezed through this test, although you could feel a temperature change the gloves remained comfortable and dry. They dried quickly afterwards.

ICE CUBE MELT TIME: 3 hours, 53 mins, 07 secs.

VERDICT: Ben said: 'They're comfy and warm, grip well and are relatively dexterous when you consider their thick material. The lining is sewn in, which is good. The only downside is the price!'

Insulation test results



PBO verdict

Individual dexterity plays an important part in glove performance: however, the Sealskinz Ultra Grip Touch Screen glove proved itself to be a worthy winner of the PBO Best Buy rating after multiple tests by several different testers.

Our testers were also very impressed by the Musto Performance Gore-Tex but at more than twice the price of the Sealskinz Ultra Grip, we did not feel they offered twice the performance.

During the touch-screen test, swiping from left to right as if to answer a call and dialling 999 on a calculator, stand-out performers were both Sealskinz' gloves, Peter Storm microfibre waterproof, the DexShell Alpine and Thermfit, Musto Performance Winter Gloves and Henri Lloyd gloves. Moderate performers were the Helly Hansen and Peter Storm Active Waterproof gloves, while the Musto Performance Gore-Tex only worked when wet. Gill's gloves lagged behind in this test, with testers finding them 'pretty clumsy' to use.

While the Ultra Grip may not have been as warm as some of the thicker gloves on test, they were thoroughly waterproof and the best all-rounder, and performed strongly in the grip and dexterity tests.



Dartmouth

Lively Dartmouth, steeped in maritime history, is a West Country port not to be missed, says Nick Burnham

If you have to pick just one West Country port to visit then it has to be the River Dart. So steeped in history is it that upon approach, the very first thing you see is the 80ft tall day beacon mounted high on the hills to the east of the entrance. Erected in 1864 by the Dart Harbour Commissioners, its purpose was to guide mariners to the entrance back in the days when landfall wasn't a blip on a GPS screen.

And that history, that link to our maritime past, just keeps on coming. The river is guarded by English Heritage-owned Dartmouth Castle, unchanged for over 600 years. Kingswear Castle flanks it on the opposite bank and dates back to 1502. And you're not even in the river yet!

Enter the steep-sided estuary and you'll find the naval port of Dartmouth ahead of you, watched over by Britannia Royal Naval College. The second and third crusades sailed from here

in 1147 and 1190 (the first creek you pass is called Warfleet Creek – many of the 164 ships that amassed in 1147 anchored here) and the Pilgrim Fathers berthed the *Mayflower* here in 1620 on the way to the New World.

Many buildings date back, unchanged, to Tudor times – it's hard to think of another port so

authentic and original. It's why the popular 1970s TV drama *The Onedin Line*, set in the 19th century, was mostly filmed here.

There's also a railway station – now a cafe – that has never actually seen a train, or indeed railway lines. It was built in the late 1800s with the intention of extending a railway link to Dartmouth via a bridge at



Good sailing to be had for small boats within the estuary

Dittisham, but objections from locals meant that the line never got built, leaving the station marooned on the riverside.

Lively scene

But it's not just for history that people come to Dartmouth. Pick an event – the music festival in May with over 100 gigs, the comedy festival, the food festival, Shakespeare Week. Or, of course, the famous Dartmouth Regatta during the last week of August every year with its sailing and rowing races, steam boat rally, classic review and incredible air show and firework displays.

And if all that sounds too much, there are 10 miles of totally unspoilt wooded estuary navigable to Totnes and dotted with picturesque villages. You could come here for a day but stay for a week.

Approaching Dartmouth

The River Dart entrance is difficult to spot – it's almost invisible from a mile or two out. Fortunately the day marker isn't, providing much reassurance that the mouth of the river is actually there.



FROM THE EAST

Approaching from the east you'll spot the two large rocks of the Mew Stone and Eastern Black Rock first. Despite the fact that it's theoretically possible, do not be tempted to pass between the Mew Stone and the shore – sharp 'teeth' here have caught out even seasoned local professionals in the past.

With the Mew Stone to starboard you'll quickly pick up the Mew Stone South Cardinal buoy and then the West Rock South Cardinal buoy. At that point the river entrance is clearly visible.



Mew Stone and day marker announce your impending arrival



Observe the Mew Stone and West Rock south cardinal marks (circled)



Six-knot markers in summer demarcate the harbour limits



Dartmouth offers one of the most spectacular landfalls



FROM THE WEST

Be aware of Homestone Ledge, marked by a red port-hand buoy ('Homestone'). The Western Blackstone rock off Blackstone Point further in is another area to be aware of, but it's easily sighted in clear visibility, and finally the port-hand 'Checkstone' buoy will keep you clear as you approach the entrance. At night a sector light (red/white/green) positioned low on the beach at Kingswear (on the east bank of the river) will guide you in. Sheltered in most conditions, but strong southerly winds can create quite a swell, especially in combination with an ebbing tide.

Speed restrictions

If you're in a fast motorboat, please be aware that the harbour limit, and therefore the six-knot speed limit, extends a long way out. You need to be below six knots by the time you reach the green Castle Ledge buoy. Yellow speed limit buoys line the harbour limit in summer, a recent addition that have finally (mostly) put paid to large motorboats planing all the way to the castle.

With no bar, the river entrance itself is a doddle with deep water almost all the way across. Further upstream, be aware of the lower and higher car ferries. The lower ferry is one or two (depending on demand and the time of year) 39m ferry pontoons that are propelled by tug boats alongside and require plenty of room to manoeuvre. The Higher Ferry is a floating bridge that runs along steel cables that sink to the river bed. For obvious reasons you don't want to get too close to the ferry and these cables before they've had a chance to sink. There's also a passenger ferry to be aware of, and numerous tripper boats (including the magnificent 'Kingswear Castle').



Kingswear Castle, built in 1924 and the UK's last remaining commercially-operated coal-fired paddle steamer

Moorings

There are three large marinas in the River Dart – Dartmouth, Dart Marina and Noss Marina. Dartmouth is the first marina you'll reach and is situated in Kingswear, directly opposite Dartmouth. Dartmouth has dedicated visitor pontoons that can handle craft of up to 65ft (20m) at a cost of £2.50/m plus VAT per day. While it's not possible to book space in advance, Dartmouth staff say they will do their best to accommodate visitors. Call them on VHF Ch80 as you approach.

While Dart Marina (further up on the Dartmouth side) doesn't have specific visitor pontoons, it does utilise vacant berths for visitors and charges the same as Dartmouth. Noss Marina further up again above Kingswear does similar, but bear in mind that Noss is (unusually) not a finger berth marina and so will almost certainly require rafting. You will save 2p/m on the visitors' rates, however. Both monitor VHF Ch80.

Dart Harbour Authority offers



Fuel is available from a clearly-marked barge in the centre of the river

various provisions for visiting yachtsmen from town quay pontoons and mid-river pontoons to swinging and trot moorings available on a first come-first served basis at various prices from 85p/m per day. Fees double after 14 days – a scheme designed to encourage regular turnover of visitors. Call Dart Harbour on VHF Ch11.

Facilities

The River Dart is well blessed with facilities. Dartmouth in particular is a full service marina with a 35-tonne travel hoist (available at all states of tide), boatyard, chandlery, electrical and mechanical engineers and shipwrights.

Dartmouth itself is home to a chandlery, sailmaker, rigger, yacht

brokers and engineers. Further upstream lies the boatyard Dartside Quay, owned by MDL Marinas. Its 65-tonne travel lift is one of the largest in the area, but be aware that access is tidal.

Fuel is available from a clearly-marked barge in the centre of the river that dispenses both diesel and unleaded petrol, contactable on Ch6, call sign 'Dart Crusader'.

Further upstream is a waste pontoon offering recycling as well as fresh water.

There are two yacht clubs: The Royal Dart Yacht Club on the Kingswear side (close to the lower ferry slipway) and the Dartmouth Yacht Club (as the name suggests, located in Dartmouth on the embankment). Both offer facilities to visiting yachtsmen including showers.

Slipway launching

The only area where the River Dart falls slightly short is slipway launching. It is possible to launch at the edge of the Higher Ferry slipway at Dartmouth. There's also a small cobbled slipway next to the Royal Dart Yacht Club, but access to it is extraordinarily tight. Dittisham has a small slipway, and there's a small tidal one at Totnes.

Anchorage

Newfoundland Cove to the east just outside the river is a popular and scenic anchorage. Exposed to strong south-westerlies, it is otherwise a pleasant and sheltered spot. In the river the only designated anchorage is east of the mainstream large ships' buoys between the buoys and the mooring trots off Kingswear. Contact Dart Harbour on Ch11 for advice.



Dart Marina, one of three within the river



Jawbones Hill, a perfect vantage point (especially during the regatta air show)

Shopping and supplies

Supermarkets, pubs, restaurants, clothes emporiums and more art galleries than you can shake a tiller at. Try Cafe Alf Resco for breakfast or brunch between 7am and 2pm, the place to eat of a morning.

Good walks

Dartmouth Castle is an easy and worthwhile 30-minute stroll from Dartmouth. During

the summer there are small wooden ferry boats should you wish to walk one way and boat the other. The two car ferries (both of which take foot passengers) link a flat circular stroll around Dartmouth Harbour. Or if you really want to stretch your legs, head for Kingswear and bear south out towards Froward Point for spectacular high-level coastal views and the chance to get right up to that historic day beacon.



Dartmouth Castle is an easy 30-minute stroll from Dartmouth

USEFUL CONTACTS

HARBOUR MASTER Tel: 01803 832337 · www.dartharbour.org

ROYAL DART YACHT CLUB

Tel: 01803 752496 · www.royaldart.co.uk

DARTMOUTH YACHT CLUB

Tel: 01803 832305 · www.dyc.org.uk

FUEL Tel: 07801 798861 · www.yeowardboatyards.com

DARTHAVEN MARINA

Tel: 01803 752242 · www.darthaven.co.uk

DART MARINA Tel: 01803 837161

www.dartmarinayachtharbour.com

NOSS MARINA Tel: 01803 839087 · www.nossmarina.co.uk

DART HARBOUR YACHT TAXI

Tel: 07970 346571 · www.dartharbour.org/yacht-taxi-service

Further upriver



Upstream to the village of Dittisham (about two miles from Dartmouth) is navigable at all states of tide. Beyond, the river is navigable for a further eight miles all the way up to the Elizabethan town of Totnes on a high tide, a trip well worth making for its astonishing natural beauty and peaceful tranquility, not to mention wildlife spotting opportunities.

Seals, herons, cormorants, egrets, oystercatchers and kingfishers are often found in the upper reaches – get really lucky and you might spot a family of otters.

The channel is well buoyed, but it is well worth having a chart to ensure safe navigation as it does get very shallow in places. As a rough guide, vessels drawing less than 0.9m (3ft) should be safe to proceed to Totnes two hours after low water. There are visitors' swinging moorings of various sizes at Dittisham for boats up to 18m. Blue and emblazoned with a black 'V', each is marked with the maximum length permissible.



Upper reaches of the river are peaceful and undisturbed



Baltic Wharf and Steamer Quay (to port) offer limited landing at Totnes



Restoring a catamaran



A bargain boat and a bargain fit-out: how Ivor Durrant bought and restored his Heavenly Twins catamaran

I first saw the very neglected Heavenly Twins catamaran *Two's Company* in a boatyard about five miles from our home in Ipswich, and felt that it might make a good project boat.

On inquiring at the yard I learned that she'd been there for years, but all bills were paid and up to date. A phone call to the owner with an offer to buy the boat, however, resulted in a flat refusal.

Five years later, we found the same catamaran had been loaded onto a lorry and moved 10 miles to another boatyard, and was now situated just 500 yards away from the Waterwitch my wife Denise and I then owned.

Nothing seemed to have happened to *Two's Company* in the interim, other than the fact that most of the boat's interior had been removed and was lying underneath her in a decaying condition.

I asked about her at the yard and



Denise and Ivor took it in turns removing moss and mould from both inside and outside the boat

they politely approached the owner – who still wasn't selling!

Roughly two years later, having decided that a Heavenly Twins catamaran would be the ideal boat for our needs (26ft,

centre cockpit with large aft cabin/cabins, a cat we could handle with just two of us on board), I searched for one online – and found *Two's Company* on an auction site, with no bids.

I emailed the owner straight away and made him an offer, but his reply was still no: he felt sure that his boat would fetch a higher price as it had not been used for 23 years, so it should be considered as hardly used!

I eventually won her on the internet auction for £1,602 – far less than I would have paid on any of the other three occasions when I tried to buy her, as it turned out.

Indirectly, the passage of time had helped the price, but the boat's condition had also worsened considerably in the last few years – and now the fun was about to begin...

Two weeks later, work on the cat started in earnest. The first job was to pressure-wash her inside and out. Denise and I took it in turns removing grass and moss from the inside, and eventually discovered that the decks were, in fact, white – and that the windows were about as watertight as the *Titanic*.

Cleaning took a couple of days of continuous work, followed by the placing of a glassfibre patch over a redundant skin fitting and a quick coat of red oxide paint below the waterline. She already looked so much better, although we knew we had a long way to go before we would be sailing.

Nevertheless, she still got a wet bottom for the first time in 23 years as we used an electric outboard to motor her 200 yards to her new drying mooring at the

...there's a lot of work to do



FAR LEFT
Mouldy heads
needed a good
clean-up

LEFT Helm was
in need of a tidy
as well

BELOW LEFT
Peeling vinyl from
cabin bulkhead,
roof and sides
was unsightly



Orwell Yacht Club in Ipswich.

The rudders had been removed by the previous owner for repair, and he agreed to deliver them to us along with the sails. As expected, the rudders still needed attention, but the sails were all new and still in the original bags, which made our bargain boat even more of a bargain.

Shop around for windows

After cleaning the boat, we wanted to remove all the windows and replace them to get her dry inside. The windows were easy to get off, but the remains of the original sealant were either stuck fast or fell off completely.

We sourced quotes from three different Perspex window suppliers, and eventually got them made by a local company who were very conscientious and half the price of the next nearest quote – which goes to prove it is very worthwhile shopping around!

The windows were all through-bolted and sealed with Sikaflex – against advice from many in the yacht club bar who were worried that I might not be able to get them out again when they started leaking. However, by the time the Sikaflex has got old and starts to deteriorate the Perspex will probably have aged to the point of replacement as well, so a grinder will be used to cut them out if necessary.

With the windows in, we found the stepped mast stored on the deck was always getting in the way, so we erected it to make sure it all fitted.

The next job for attention was the companionway door, which was falling off. It had originally been made to slide open, revealing an entrance into the main cabin directly below the mast. We wanted to change this arrangement for a pair of swing-doors, but found the engine cover prevented this by impinging upon the swinging room.

I started removing what was left of the old door frame anyway, and found that it all fitted into a bucket – the rot was well advanced. As this was a structural part of the main bulkhead and directly below the mast step, it needed to be rebuilt.

After searching around online I came

ABOVE The galley
was scrap and
needed complete
replacement

BELOW Removing
the leaky old
windows proved
a straightforward
enough job



across a steel-framed door from a large motor-yacht on an auction site and paid what I thought was a lot of money for it: nevertheless, I found it absolutely spot-on for the job in hand.

The plan was for the door to be fitted in the hole left by the original one, but when we held it in place we found there was still a problem with lack of swinging room. We then came up with the idea of moving the companionway entrance to starboard. This meant we could block up the bulkhead area directly beneath the mast step with some major mast support, and still leave room for an opening portlight. After all the supporting timber was glued, screwed and treated, we covered it with a glassfibre sheet cut from a redundant advertising board that was being thrown out by the boatyard.

The new door had locking handles on the inside but no way of locking it from the outside, so we found the manufacturers' phone number on a label and asked them if they could provide us with a barrel lock to fit the door. Yes, they replied: just send us £120 and we'll provide you with one! Returning to the internet auction site, we found two for £22 including delivery.

With winter coming on, we





removed anything that we didn't want or that needed replacing. This included the bulkhead that divided the aft cabin into two, as we wanted one big cabin. After removing the bulkhead and getting out the tape measure we found that there was space for a full-size double bed, and room to spare. The problem would be getting a proper sprung double mattress down a 2ft square hatch, but luckily we found a company that rolls and vacuum-packs mattresses for transport. Getting it out again might one day be a problem!

Most of the galley had been removed, and we dug, chipped, cut and cursed out all the sodden closed cell foam that had been put into the keels from new (with age, it seems to act as more of a sponge than a buoyancy aid). The headlining, or what was left of it, was also removed, along with the flexible water tanks. After yet more cleaning, and some painting on the warmer winter days, we were getting to the point where we could think about putting things back in instead of taking them out.

Fitting out the galley

As the winter turned into a cold, wet spring, our thoughts turned to fitting out the galley: much of the winter had already been spent in the workshop back home making the motor and gearbox fit together – but more about that later.

We sat down and made a list of what we wanted in our ideal galley, working from my wife's list as she said my lad's version of a galley was more of a floating bar.

The sensible list had things like a fridge, an oven, twin sinks, a pressurised water system and a large uncluttered worktop area. This looked expensive, so we decided that we would source all the parts needed as and when they became available at a good price and then build the galley to fit the appliances instead of the other way round.

The fridge had already been purchased

at the same time as we collected the new companionway door and was installed at the after end of the galley, with the compressor fitted into a large locker below the cockpit to help disperse the heat generated.



Then, on a visit to B&Q, I found the discounted items section and all my dreams were answered: for some reason known only to the manager, they had reduced two trolleyloads of kitchen doors to 10p per pack. I was in saver's heaven, and we bought the lot at a total of £7.40. I'd always said that I would never use MDF on a boat, but I reckoned that if I sealed the backs (and any cuts) with varnish, the front laminate would be OK: and anyway, at that price I had little to lose.

The doors all seemed to be in different finishes, so after unloading the trailer we sorted them into piles and decided on cherry worktops and birch shaker-style doors as there seemed to be enough of those, and the light wood finish would

CLOCKWISE FROM TOP LEFT
The original companionway is blocked off and a new door fitted to starboard; hole for a portlight in the sealed-off doorway; a new oval portlight feeds more light to the galley; test fit for the new portlight in the old companionway

BELOW
Household sink unit was cut down to fit the galley



look bright down below. When we started fitting the doors we discovered that they weren't made of MDF at all but were solid birch: result! Many packets contained three drawer fronts, and these made ideal backing panels with minimal cutting. The total cost for the woodwork was £1.30 for the doors, while the other bits for the framework – bearers and so on – came from the could-be-useful department in my workshop.

The ceramic hob unit was a diesel-fired Wallas that I found in a local boat sales yard for £90. We decided that a diesel oven would also be a good idea as this would mean there'd be no need for gas on board.

That left the oven to source. The shiny new Wallas ovens on the Kuranda Marine stand at that year's London Boat Show cost more than I had paid for my boat. Still, I tentatively asked the very nice man on the stand about second-hand ones, and to my surprise he said they did have just one that had hardly been used. He added that they would service it and check it out for us, then email me with a price when they returned after the show.

A couple of weeks later I duly received an email saying the oven was ready, and if I brought the hob unit up when I collected the oven they'd show me how to service both units. A fair price was agreed, and we learnt a lot and met some very nice people at the same time.

After that, it was back to B&Q on a 15%-off day to buy a 1.5-bowl sink, which



LEFT Engine head was removed from a Mariner outboard leg...

ABOVE ...and a 48V electric motor bolted in its place. The set-up proved unreliable, however, and was replaced with a Torqeedo electric drive system

we installed with a bit of cutting and shaping with an angle grinder to fit the curve of the hull.

A local chandlery's closing-down sale provided a pressurised water system, and taps, while the pipework and fittings came from a DIY shop and were end-of-line push-fit fittings and a reel of 10mm flexible pipe. This system works well, and I can easily add to it by cutting the flexible plastic pipe with a hacksaw and pushing a T-fitting in the line. This pipe goes from one side of the boat to the other, and is easily fed through lockers and over the chain locker.

The last piece of the jigsaw was the floor: the original did not fit around the new galley and was rotten anyway.

The replacement galley floor was another manager's special from B&Q – hollow plastic decking planks for which we paid just £1 per 2m board. It clicked together and made very solid lightweight flooring that finished the galley nicely, as did a new porthole. The original plastic porthole in the galley was faded and grubby, although at least it didn't leak. We removed it and tried cleaning it with the pressure washer, bleach, T-Cut and even a blast in the dishwasher when Denise wasn't looking! However, it still looked grubby, so I eventually sourced a pair of oval stainless steel portholes at a reasonable price from a workshop about 200 yards from the boat. After making the hole in the hull larger than the original and fitting the opening porthole, the galley changed into a light, airy space.

Motor and batteries

Next, we got *Two's Company* out and scrubbed her bottom, gave her two coats of epoxy and Coppercoat and replaced her skin fittings. Having done so, and with most structural jobs completed, the next item on the agenda was to fit the electric motor and batteries. A 48V electric brushless marine drive motor and controller were purchased from the USA

at considerable cost and fitted to a Mariner 8hp outboard leg. The batteries, brand-new 210Ah gel batteries that I could just about lift, were sourced from my favourite internet auction site. With these all connected up and a 48V Air-X wind turbine, also new from the aforementioned auction site, we had a complete system.

This worked well at first, only using 10% of the battery power in two days of motoring trials: but then the motor failed in the River Orwell when we tried turning it on to manoeuvre into our berth. After a day testing and tinkering I contacted the company in America: the motor and controller were both over a year old, so the guarantee was no longer valid. With some further testing, it was determined that the controller had failed. The company no longer manufactured that model, but offered to post me an updated

version for only \$1,000! I declined, and opted instead for a Torqeedo Cruise 4.0 electric drive system.

On our first, four-day shakedown cruise with the Torqeedo we sailed, motor-sailed and motored with total success: the wind turbine kept charging even when motor-sailing, and we had more power in the batteries when we returned than when we started!

As *Two's Company* runs very quietly she has been nicknamed the stealth boat in the club bar...

Not quite finished

There's still plenty to do: interior lights and wiring, finish the headlining, label electrical switches and quite a bit more.

Two's Company is now safely tucked up in her drying mooring by the yacht club, sporting her new name signage on each side: we are planning to cruise locally at first as we get used to sailing our new (old) boat. If you are out and see *Two's Company* careering towards you, give us a wave: we're a friendly lot and will wave back to any practical boat owner!

Two's Company looking shipshape and ready to go back in the water



Sailing into the mouth of the dragon

Dudley Campling is forced to dive into sinister waters to effect a running repair when the rudder jams on his steel ketch

Things wouldn't have been quite so bad if the rudder had been jammed while steering in a straight line. Disaster struck our 14.6m (48ft) steel ketch *Folkloric* when the driveshaft vibrated free of the three adjusting bolts on the nylon shock absorber, leaving the 2in-diameter shaft free to slide back until the propeller encountered the rudder. This happened while motor-sailing and making a tack to port: in moments we lost the steering, the motor and the possibility of sailing out of our predicament.

It was a pitch-black night off the north coast of Trinidad, about 15 miles from the island of Monos in the Bocas del Dracone or Dragon's Mouth, named for the fiercely strong currents that flow out of them as the Gulf of Paria empties itself into the Atlantic.

We had just spent the worst part of the hurricane season in Trinidad, biding our time until it was safe to sail north to Bequia in the Grenadines via Hog Island on the south coast of Grenada.

Our sojourn in Chaguaramas was meant to include a haul-out in Power Boats Mutual Facilities (a boatyard run by our friend Donald) but certain unforeseen events prevented that, leaving us barnacle-encrusted and sluggish with the prospect of a long slog to windward in order to reach Hog by the next morning.

ABOUT THE AUTHOR



Dudley Campling, formerly a custom painter with Iron Horse motorcycles, started sailing in 1979 until Hurricane Gonzalo in 2015. He now lives in Portugal.



Roughly 15 or 20 miles north of Trinidad is where the drop-off into deep water occurs, and it is there that the true monsters of the deep live. There are marlin, manta rays, blue sharks, oceanic white tips, swordfish, hammerheads with their weird, wide-spaced eyes and even the largest fish on earth, the massive whale shark – all there to consume the vast quantities of smaller fish that shoal along the edge of the South American continent.

Into the water

This was a very scary thought since I knew I'd probably have to join them in their element very soon. I'd tried, after dropping all the sails and stopping the engine, to pull the shaft back into its coupling from inside the engine room, but to no avail. We were 15 miles or so off a lee shore and time was strictly limited.

After little thought, it was obvious that I would have to go in the water and tackle the problem from outside. Stationing Flo on the port side and Charlie on starboard, I donned flippers and mask and, with a headlight, entered the murky

water. The visibility was about 10ft, and the water was bright green in the light of my torch.

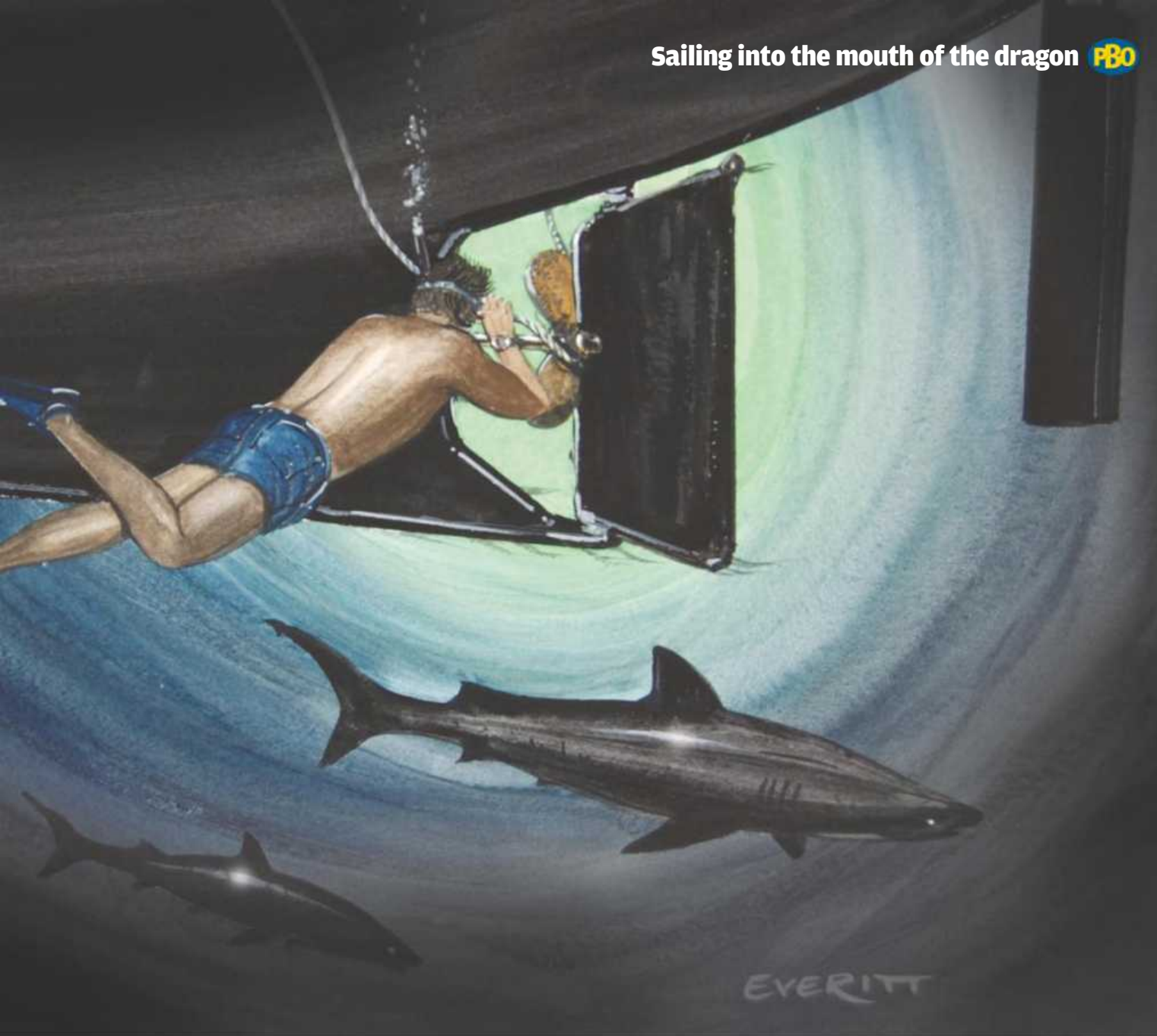
I imagined all of creatures I've mentioned waiting just beyond the scope of the light for a tasty morsel such as me, and my first impulse was to leap back on board at once. But, realising I had little choice, I took one end of a half-inch line from Flo and swam down to the prop, the idea being to pass the line between the rudder and the propeller and up to Charlie on his side of the boat so the prop could be pulled forward.

Unfortunately, I had made an arrangement with Flo that, in case of emergency, I would tug the line three times and she would pull in the line quickly in order to save the part of me that was left after the depredations of those monster fishes.

The space that I had to work with was about half an inch, and it took me three tries to get the line through, just before I ran out of breath. Suddenly, it leapt out of my hand and zipped back to the surface,



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Flo had felt three tugs and pulled in the line as instructed, expecting a frayed end and some gory bits and bobs owing to the slackness of the line I'd let go.

After cancelling the safety instructions, I had another go at getting the line through the gap, and after great difficulty I finally managed to get the end up to Charlie on the starboard side.

As the two of them pulled heartily on the line, I got my back to the rudder and turned the prop back and forth while pushing with all my might, at the same time sustaining numerous small barnacle cuts. This alarmed me considerably since I was effectively chumming the water and attracting Jaws and his hangers-on. I got about 4in clearance between prop and rudder before I could stay down there no longer, but at least we'd be able to steer and sail even if we had no engine.

I climbed back on board with some considerable relief and put a couple of hose clamps on the shaft to stop it sliding back out, then re-tightened the stuffing

box which I'd previously slackened off.

In this situation, I decided to sail back through the Bocas and anchor until morning, when I could see better and perhaps get some motive power back. It was only 15 miles, and with the wind astern we went wing-and-wing toward the Bocas. You'd assume it would be a short and easy

Flo felt three tugs and pulled in the line, expecting a frayed end and some gory bits

trip with the favourable wind blowing strongly – and indeed we closed the gap with the Bocas in a couple of hours or so.

Entering was a whole different kettle of fish, however. The current was five or six knots in the gap and the land on either side of the boat seemed to crawl past a rock at a time, even though the sails were taut and straining.

By the time we got in behind Monos we were all exhausted and dropped the

anchor in about 100ft of water, crawling into our bunks and sleeping until well into the morning light. Nothing feels better than a soft bunk after serious work and sleep deprivation.

After breakfast, I took a scissor jack down to the propeller after first tying it safely to the rail with a stout piece of cord. By twisting and pushing I managed to get enough space between prop and rudder to operate the jack, which made short work of

pushing the prop back where it should be.

After the shaft was re-coupled we had to get 300ft of anchor chain up by hand and with the assistance of the halyard winch on the mast owing to the lack of a windlass – but that's another story.

With the engine running and going with the current we shot through the Bocas like a carthorse at full gallop, sailing on overnight to reach beautiful Bequia, our home-from-home for many years.

*Send us your boating experience story and if it's published you'll receive the original Dick Everitt-signed watercolour which is printed with the article. You'll find PBO's contact details on page 5.



The big PBO Chri

Our pick of PBO's best on test over the past year is up



PBO is offering one massive prize, inspired by our Top 10 test items of the year. No, it's not just an

office clear-out – all the items will be brand new, sent direct to the winner from the generous suppliers.

One lucky winner will be picked at random from the prize draw entries to receive all 10 products. But hurry – the competition closes on 4 December, so get your entry in smartish.

The winner will be able to choose the size of their deck shoes, and to pick the LifeProof phone cover that best suits their own device. Our top prize of two Pontos compact winches is worth £1,366 – quality items in their own right, but the winner is able to get a four-speed winch upgrade by paying the difference. Good luck, and Merry Christmas!



Pontos winches

(PBO August 2015 review)

Pontos's four-speed winches are now available in the UK in sizes 40, 46 and 52. Changing gear is simple: wind the handle the other way. A clutch and spring mechanism does the rest. The Grinder versions, best suited to racing yachts, have two gears equivalent to those on a conventional two-speed winch, plus two higher gears. For cruising sailors, the Trimmer winch versions also have two 'normal' gears but the extra two are lower.

There's also the Compact two-speed winch, which is the size of a 28 but its low gear gives the power of a 45. Win two Compact winches worth £683 each, with the option to upgrade to the Grinder or Trimmer versions, which cost from £1,046 each, by paying the difference. ■ pontoswinches.co.uk

PRIZE
VALUE
£1,366



Gin Gins Caramel

(Reviewed in PBO July 2015)

The Ginger People's Gin Gins Caramel sweets contain 30% ginger per sweet and aim to combat motion sickness whether sucked, chewed or melted in warm water for a soothing drink. Ginger helps to boost digestive fluids and neutralise acids, and is an alternative to anti-nausea medication. We were impressed with the blast of ginger warmth you get from this slightly chewy sweet – but they're not for the faint-hearted. Win a special 1kg bag, worth £51. ■ www.healthy2u.co.uk

PRIZE
VALUE
£51

Weatherproof Diskus padlock

(Reviewed in PBO November 2015)

With a shape that minimises the visible shackle to make it harder for thieves to attack with bolt croppers and hacksaws, this disc lock has a 100% marine grade stainless steel body and shackle. It was unaffected by our corrosion test and proved very difficult to break into. At just 50mm wide and with a 6.5mm shackle, the ABUS Diskus 24iB/50 is small enough to fit on most lockers or washboards and still provide good security. Available with different keys or same keys.

■ www.nothingbutpadlocks.com



PRIZE
VALUE
£19.33

B&G Vulcan 7 plotter

(Reviewed in PBO July 2015)

B&G is known for its high-end racing kit but has recently extended their offering for entry and mid-level cruising boats with its new Vulcan chartplotter specifically for sailors. It can be interfaced with NMEA2000 devices like instruments, sensors, AIS etc. to make a fully-featured 'do everything' display for use in either the cockpit or chart table. It had the brightest screen on test. The touchscreen was sensitive and responsive. It has built-in WiFi to aid with updating and downloading sailing apps and can mirror its screen on tablets or smartphones with an add-on app.

■ www.BandG.com



PRIZE
VALUE
£795

Mirka Deros 650CV 'dust-free' sander

(Reviewed in PBO August 2015)

This electric sander connects to a vacuum cleaner – the same as most others – but where the Mirka differs is in using an abrasive mesh which lets the vacuum suck the dust through the mesh: a standard sander uses a circle of ventilation holes and thus misses much of the dust. We used this lightweight, compact unit to sand out the forepeak of a boat when replacing headlinings and it removed old paint very effectively with none of the usual clouds of dust – very impressive. Win a Deros 650CV sander with a yellow plastic case and Deros 125mm backing plate included. ■ www.mirka.co.uk



PRIZE
VALUE
£474

STANDARD TERMS AND CONDITIONS. The promoter is Time Inc. (UK) Ltd ('TIUK') which has its registered offices located at Blue Fin Building, 110 Southwark Street, London, SE1 0SU. 2. The PRIZE DRAW is administered and fulfilled by Time Inc. (UK) Ltd ('TIUK') which has its registered offices located at Blue Fin Building, 110 Southwark Street, London, SE1 0SU. 3. Entry into the PRIZE DRAW is free to enter and entrants can enter by coupon or online. 4. The prize is 1x Draper Expert 5W handheld searchlight, 1x Mirka Deros 650CV, 1x plastic yellow case, 1x Deros 125mm backing plate, 1x pair of Musto-Clark Orson Drift shoes, 1x set of 3 ABUS 24iB/50 marine padlocks, 2 x Pontos Compact winches, 1x TC0001S TillerClutch standard, 1x 1kg bag of Gin Gins Caramel, 1 x 33% off other Gin Gins purchases for one basket purchase, 1x B&G Vulcan 7 Chart Plotter, 1x LifeProof smartphone case, and 1x Meridian Zero 20m flat hose (Prize). 5. The PRIZE DRAW is open to residents in the UK, Channel Islands, Isle of Man aged eighteen (18) or over, excluding employees and past employees of TIUK and DRAPER TOOLS LTD, Mirka (UK) Ltd, MUSTO Limited, Nothing But Ltd, Pontos UK Ltd, WaveFront, Inc. USA, The Ginger People Europe Limited, Navico UK Ltd, Other Products EMEA Incorporated, Meridian Zero, its printers and agents, the supplier of the prizes and anyone materially connected to the administration of the PRIZE DRAW. Proof of eligibility must be provided upon request from TIUK. 6. The PRIZE DRAW will run on the following competition websites ('Prize Draw Website/s'): www.pbo.co.uk/pbochristmasgiveaway and in the details of the Christmas Gift Guide within the PBO December 2015 issue. 7. Entry into the PRIZE DRAW is by entrants filling their required details via coupon or online and submitting to [one of] the Competition Website[s] through the relevant coupon or form printed in the Christmas Gift Guide. 8. PRIZE DRAW will

open on Thursday 5th November 2015. 9. Closing date for the receipt of PRIZE DRAW entries is Wednesday 2nd December 2015. 10. Entry into the PRIZE DRAW is online only via the links specified above, or by post using the relevant coupon or form printed in the Christmas Gift Guide. Entry made online using methods generated by a script; macro or the use of automated devices will be void. Entries which are incomplete, illegible, indecipherable or inaudible (if made by phone) will not be valid and will be deemed void. 11. Only one (1) entry per person may be submitted, which will then become the property of TIUK. 12. All entries must be made directly by the person entering the PRIZE DRAW. 13. Use of a false name or address will result in disqualification. TIUK accept no responsibility for entries unsuccessfully submitted to the Prize Draw Website/s or for entries lost, damaged or delayed in the post. 14. The PRIZE DRAW will be drawn on Monday 14th December and will be supervised by an independent observer. 15. Unless otherwise stated the winner will be drawn at random from all correct entries received by the closing date stated within these terms and conditions. 16. The winner will be notified by TELEPHONE and POST on or before 30th December. 17. Reasonable effort will be made to contact the winner: if the winner cannot be contacted, or is unable to comply with these terms and conditions, TIUK reserves the right to offer the prize to the next eligible entrant drawn at random, or in the event that the promotion is being judged TIUK reserves the right to offer the prize to the runner-up supervised by an independent observer. 18. If the winner cannot be contacted within 7 DAYS from the draw date, an alternative winner will be drawn. 19. The decision of TIUK is final, based on the criteria set out in the promotion, and no correspondence will be entered into over this decision.

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PRIZE
VALUE
£39.95

Meridian Zero 20m flat hose

(Reviewed in PBO May 2015)

Made in the UK, this comprises a flat, single-core hose with good quality push-fit end fittings which didn't leak under pressure.

A threaded male adaptor is supplied along with a 25-38mm female hose clamp for awkward fittings, and there is a variable nozzle on the end. The plastic reel has a removable winding handle which slots into a socket but is stored inside the reel. It could be drilled for a lanyard attachment, to avoid it getting lost in a locker. Our test found the hose was resistant to kinks – the thick-walled hose meant that water pressure pushed them out, and it had a good flow rate.

■ www.force4.co.uk



PRIZE
VALUE
£59.95

Musto-Clark Orson Drift shoes

(Reviewed in PBO June 2015)

These smart but sporty deck shoes feature premium, salt water-resistant leather, rust-resistant eyelets, ROCK rubber soles with a siped and micro-siped tread pattern for traction and aquaDX technology for water drainage.



The EVA insole has a sheepskin lining and there's an EVA/ROCK midsole. A

good hybrid between smart deck shoes and the trainer styles, these felt much more secure than normal deck shoes. Our testers liked the textured insole.

■ www.musto.com

PRIZE
VALUE
£100

Draper Expert 5W CREE LED Waterproof Torch

(Reviewed in PBO October 2015)

Featuring a single CREE LED, the waterproof and shockproof ABS casing has an IP66 rating so it is protected against dust and high-pressure water jets. With a fixed pistol grip and trigger switch, a second press puts the LEDs on a lower power, a further press turns the light off. This lightweight, robust torch has a lockable switch and a stand, which enables the light to be set at varying angles. Testers noted the torch's commendable beam range and 3 x AA battery duration. Stock number 51754. ■ www.drapertools.com



PRIZE
VALUE
£21.49



PRIZE
VALUE
£79.99

LifeProof Nuud waterproof phone case

(PBO October 2015 review)

The Nuud stands clear from the crowd with its unique (and slightly daring) lack of screen cover. The plastic surround is of solid quality and boasts the U.S. Military standard for drop and shock protection, rating at MIL STD 810G-516.6. It has a sleek design and the two-piece hard case splits easily, with a clip to allow access for charging. The case is easy to grip and comes with an optional screen protector that applies directly to the glass to guard against scratches. LifeProof cases are rated IP68 – waterproof to two metres for an hour. LifeProof cases fit most Apple and Samsung devices. The prize winner will receive a case to suit their device.

■ www.lifeproof.com

TillerClutch

(Reviewed in PBO August 2015)

Made in the USA by WaveFront Marine, the TillerClutch is made from anodised aluminium with stainless components, and is designed to be screwed to the handle end of the tiller so that the clutch lever can be operated with one hand while steering normally. A 5mm line is supplied. In use, we found the TillerClutch to be the easiest and quickest to flick on and off thanks to its mounting location and the design of the lever. It gripped the line well and the captive line was in no danger of falling out. Now available from Force 4.

■ www.wavefrontmarine.com

Find the prize reviews in full
and enter online at

www.pbo.co.uk/pbochristmasgiveaway

20. The winner will receive their prize by post no later than 30th January 2016. 21. The prize is as stated and is not transferable to another individual. No cash or other alternatives will be offered. 22. Confirmation of the prize will be made by POST and TELEPHONE to the winner. 23. Failure to respond and/or provide an address for delivery, or failure to meet the eligibility requirements, may result in forfeiture of the prize. 24. The winner/s is/are responsible for expenses and arrangements not specifically included in the prize, including any necessary travel documents, passports and visas. 25. Prizes are subject to availability. TIUK accept no responsibility whatsoever for elements of the prize being withdrawn or amended. 26. TIUK reserve the right to amend or alter the terms of the PRIZE DRAW at any time and reject entries from entrants not entering into the spirit of the competition. 27. The winner/s agree(s) to the use of their name, photograph and disclosure of county of residence and will co-operate with any other reasonable requests by TIUK relating to any post-winning publicity. 28. PRIZE DRAW may be modified or withdrawn at any time. 29. No alternatives to the prizes offered will be given. 30. The provider of the prize is specified within the promotional material. 31. In the event of a discrepancy between these standard terms and conditions and the details in the promotional material, the details of the promotional material shall prevail. 32. These terms and conditions shall be governed by the laws of England and Wales and any dispute shall be subject to the exclusive jurisdiction of the English courts. 33. If any of these terms and conditions is found by a court or regulator to be invalid or unenforceable all other provisions shall continue to apply.

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‘Do something that scares you every day’



Brian Jones pledges to enter the Round The Island Race, partly to ‘mix it with the big boys of sailing’ – but primarily to raise money for an impeccable cause

On 15 December 2008, Lieutenant Aaron Lewis of 29 Commando, Royal Artillery was killed while serving in Afghanistan. I knew Aaron as the son of my good friends Barry and Helen Lewis: I watched him grow from a gangly 13-year-old boy to a fine young man who I’d have been proud to have as my son. He played rugby with my own son at Westcliff Rugby Club, and went on to play in the Wasps Academy and on to university and the military. Aaron always said that to live life to the full you should do one thing a day that scares you: and this is where my story begins.

In January of this year, I mentioned to my wife that I fancied taking part in the Round the Island Race. ‘There’d be hundreds of boats, and it’ll be a good craic!’ She replied: ‘If you want to do it, then put in for it: don’t worry about the crew and stuff, because if you do you’ll talk yourself out of it. Go for it.’

So with her words echoing in my ears I went on the internet, filled out the form and paid the fee. No going back: I was going to mix it with the big boys of sailing. As January drifted into February I twisted the arm of my sailing buddy and colleague Amanda Andrews to come along, and my good friend Keith Batchelor, who sails his own boat on the



condition for her return to the water. As the weeks rolled by, I realised that as well as being a great reason for a sail I could use the venture to gain funds for charity. Two years after Aaron’s death, the Aaron Lewis Foundation was established: Aaron’s family, friends and former service colleagues work together to raise funds for causes close to Aaron’s heart, providing access to sport and wellbeing for all, while at the same time furthering his legacy.

At my age, and with my rotund frame, the likelihood of running a marathon looked remote, and of late the only thing I seem to run up is bills: I therefore set up

River Crouch, jumped at the chance.

So, with crew recruited, it was all hands on deck to make sure my Westerly Tempest *Bootlegger* was in tip-top

a ‘JustGiving’ page, canvassed all my friends and colleagues, posted on Facebook and sent umpteen emails seeking donations to this cause.

Watching over us

After a weekend on the slip with a bit of a scrub on the bottom and the boat sparkly clean, fully fuelled and provisioned, all was ready. With chartwork done, courses plotted and a rough time schedule drawn up, we left on Monday 22 June on the 5am falling tide. Next stop Ramsgate, or maybe even Dover if the time and tides were right. The weather was miserable, but on the Kent shore a rainbow heralded our departure: from this sign I drew comfort that Aaron was watching over us and all would be well.

For a first day’s sail we had a combination of no wind, too much wind, wind in the wrong direction, sails up and then down, motor on then off. Finally we approached Dover Harbour under engine on a fairly lumpy sea, entered the Wellington Dock, moored up and looked forward to a shower and a bite of lunch. After paying the mooring bill in what

ABOUT THE AUTHOR



Brian Jones has been sailing for more than 27 years. His first boat was a Snapdragon 670 before progressing to a Westerly Centaur and now a Westerly Tempest. Day Skipper qualified, he still regards himself as an amateur sailor.



Raring to go, *Bootlegger* and crew relaxing at Shepards Wharf Marina before the big day

turned out to be the cheapest marina on the coast, we were set for our next leg.

At 7am on Tuesday 23 July we exited Dover through the west entrance and turned right (I know all the nautical terms) for another day of changeable wind conditions. Motoring into Brighton Marina, it was moderate to rough with a steep sea and a south-westerly breeze on the nose making things a little uncomfortable. I went down below to use the facilities, but we were hit by a big wave, causing me to stumble and break the hinges to the toilet lid.

Next day, Wednesday, we fixed a leaking seacock to the toilet, cleaned the boat and affixed the sponsor's stickers to the hull. Toilet seat fixings were on order to be collected at Cowes. Later that evening we were joined by Amanda: at last we were a team to be reckoned with.

Staggered starts

On Thursday the weather was on the up, with brilliant sunshine and light breezes as we motor-sailed over to the Isle of Wight and our mooring for the night at Shepards Wharf Marina. If I have one tip for anyone venturing to Cowes over the race weekend it would be to book in advance: on our arrival we were the first boat by the pontoon, but by the Saturday morning boats were rafted up seven-deep in what can only be described as organised chaos. I have never seen so many boats in my life.

After a relaxing Friday, visiting the race conference and chandlery and carrying out repairs to the toilet, race day dawned, Saturday 26 June.

For the uninitiated, the race starts are staggered, with the super boats starting first and the lesser classes following every 10 minutes. We were the last class to start, enabling us to have a shower and breakfast and be in the holding area in good time for the gun.

We were also fortunate to be next to the



Crew Keith Batcheler and Amanda Andrews are both experienced sailors



Safely around the Needles and heading eastward for St Catherine's Point

pontoon and did not have to worry about moving off to let the early starters get away.

At 8.40am, we were off: a 10-hour sail was ahead of us. Ahead of *Bootlegger* was a sea of white, with hundreds of boats travelling in every direction as they tacked across the Solent en route to the Needles lighthouse. As we started, the wind was south-westerly and increasing to a good steady blow. I noticed that some boats had put in a reef, but we held on to a full head of sail as we tacked back and forth.

On the north shore the wind seemed to drop off, but as we crossed back to the island it built up to being almost too much to manage. On the approach to the Needles we crossed to the north shore, hopefully for one last tack, narrowly avoiding running aground on the Shingles bank. We tucked in a bit of the genoa and took the pressure off as we headed back towards the Needles. Had we got it right? Did we need one more tack? No: we passed the Needles with room to spare, taking into account the guidance in the race instructions that said to keep the coastguard cottage on the cliff top in view above the lighthouse.

Mercifully not running aground on the wreck of the SS *Varvassi* that lay beneath, we turned eastward and released the genoa for a run past St Catherine's Point and on to Bembridge.

It was time for a tidy-up below before lunch, a cup of tea and a change of helmsman, with Amanda taking us round the only mark in the race, Bembridge Ledge – an east cardinal buoy to be passed to port. We had a close call as we nearly missed it, almost passing it on the wrong side. Now it was a long reach for home, with just a couple of tacks as we closed on the finish line.

Competitors are allocated their own finish line depending on class: three boats

formed the line, making two gates through which boats had to pass. Having gone so far with no disasters it would have been such a shame to be disqualified for having crossed the wrong line, but we crossed it almost spot-on 7pm to record a finish of 545th boat overall out of 1,548, 147th out of 175 in group and 43rd out of 49 who competed in my division. Not bad for an amateur, I thought – and what a cracking day all round.

So, 66.5 miles later and back in the marina, we ate on board before a few beers with the rest of the sailing world. Cowes was alive with yachties. What an atmosphere the place had: I would urge any sailor with the notion to venture further than the eye can see from the clubhouse windows to follow my wife's advice and 'go for it'.

Halcyon days ahead

As mentioned earlier, I undertook this little adventure for a number of reasons. I have raised over £1,000 so far for the Aaron Lewis Foundation, and the figure always seems to be growing, so I cannot pin it down. The foundation is about to restore a Halcyon 27 donated by a local yard owner, and it is hoped it will be used to help rehabilitate soldiers who are suffering from post-traumatic stress disorder by allowing them to work on the boat. The money I have raised will be used towards this project: however, if you own a boat you will know it is but a 'drop in the ocean' (no pun intended). At some stage a 'shopping list' will be prepared, and I will be on the scrounge to cross off the bits and pieces required.

■ To donate to the charity visit Brian's JustGiving page at www.justgiving.com/Brian-Jones12 or visit the Aaron Lewis Foundation website.

Make your own wind scoop

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With a previous home-made wind scoop now showing its age, Ann Berry fashions an efficient replacement for less than £10

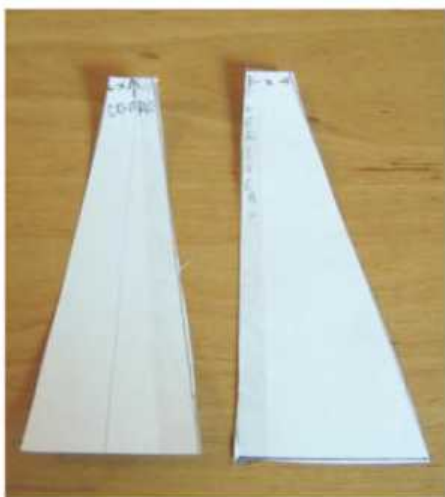
We needed a cooling breeze, but not at the expense of Mediterranean wasps, mosquitos or other flying insects invading the boat through the open hatch when the wind scoop was in position.

I'd made the existing wind scoop many years ago from a child's garden play tent (which had nice, fine material) and a coat hanger, but this was now well past its sell-by date. I wanted a new scoop which would direct air down into the cabin and allow the mosquito net covering the hatch opening to remain in place at the same time.

To make this customised scoop I chose to use a dressmakers' lining material. It has a very firm weave with little movement when pulled either along or across the fabric, so it is quite tough – but sufficiently lightweight to catch the breezes.

The wind scoop is made of three panels, a rear section and two identical side pieces. I measured the height from the forepeak roof to the halyard and the lengths of the sides of my hatch. I wanted to attach the scoop at the base by a bungee around the hatch coaming: this would allow me to have a scoop that fits tightly around the mosquito net without gaps, and doesn't require the scoop to go loosely into or over the hatch.

ABOUT THE AUTHOR: Ann Berry and her husband David sail their *Moody Eclipse Aderyn Glas* in the Ionian.



1 The rear section of the scoop is shaped. The base is the length of the hatch with the sides tapering to the width required at the top. The side pieces are almost simple triangles with one vertical side and the bottom the length of the hatch side. This makes the scoop lean forward into the wind when constructed.



2 I used a steel ruler and tape to measure and draw the shapes, with pencil, directly on to the fabric to create the three sections. I allowed two extra inches (5cm) around each measured section for seam allowance and making rolled pockets for the rod and bungee before cutting. The top of the scoop needs to be strengthened as the wind forces on the scoop can be considerable at times, and the seams should be flat-fell seams for strength. These are the seams you see in childrens' clothes and jeans. They are very strong and robust compared to normal straight seams.



3 To create a flat-fell seam I first stitched a normal straight seam, then pressed the seam open and flat. Next I cut one side of the seam back so it is narrower (below).





4 Then I rolled the longer uncut edge over to enclose the cut edge before pinning them together. You'll see your original stitching line as you roll the two edges into one.



5 I tacked along the pin line by hand, removed the pins then finished with a straight machine stitch along the seam.



6 The finished flat-fell seam. This is also used to join each section to the next and the edges of the outer sides. The lower edge of the scoop is rolled into a small tube and sewn along the top edge so a bungee can be threaded through to attach to the coaming.



7 I reinforced the top of the scoop by cutting a 6in (15cm) strip and pinning and stitching it in place. I then folded the piece over to the inside of the scoop and stitched along the top edge.



8 I then folded the top piece back under itself to the inside to form the sheath in which a stainless steel rod frame will be held. I pinned it in place and over-sewed along the sewing line. I cut two notches out of the folded top, at the corner points, to attach a rope harness which will then attach to the halyard. I reinforced these holes with binding tape.



9 Here's how the binding tape was used to reinforce the holes in the top of the scoop.



10 To create a top flap to deflect the wind downwards I cut a rectangular section slightly wider than the top opening. I pinned and stitched the edges then placed it into the top opening, stitching it on to the stitch line below the channel for the stainless rod frame.



11 Here's the flap pinned and ready for sewing below the rod pocket. I used two lines of sewing for added strength, then attached it to the sides in the same way.



12 This shows the top flap attached to the back and sides of the scoop.



13 A stainless steel rod frame bent to shape is threaded through the top pocket, and a harness tied on to attach the top of the scoop to the halyard.



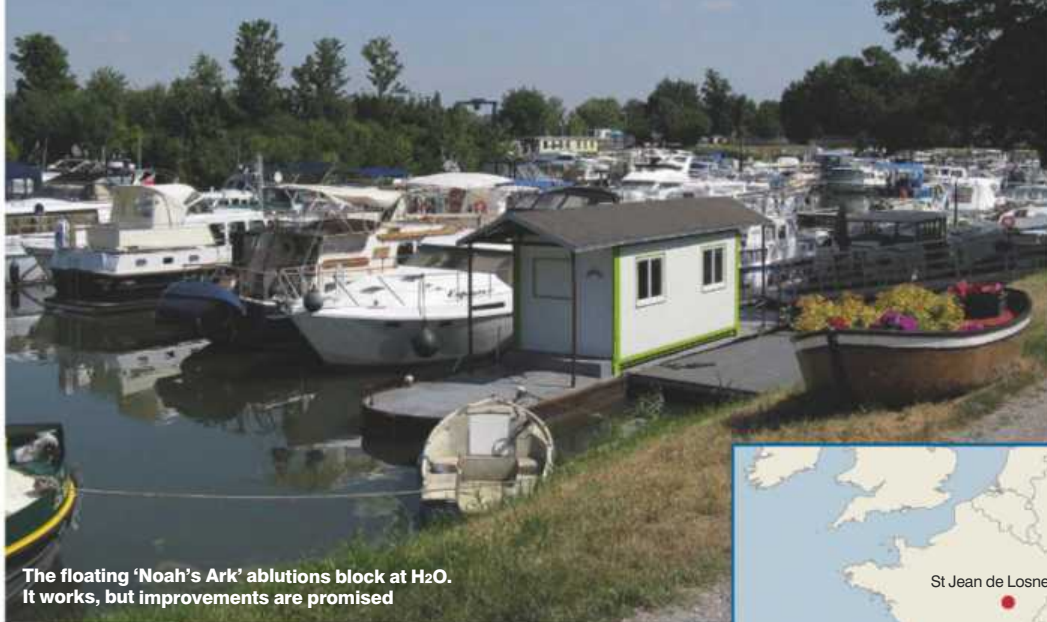
14 The wind scoop filled by the wind, doing its job with the mosquito net in place. This works really well, so much better than our older scoop: when at anchor the boat will always be pointing into the wind so we will get the breeze, and when we're moored we simply move the base around the coaming until it catches the wind again.

Readers' cruising destinations, near and far

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Midway to the Med

Richard Hare reviews the H2O Marina at St Jean de Losne



The floating 'Noah's Ark' ablutions block at H2O. It works, but improvements are promised



St Jean de Losne may be geographically midway between Dover and the Mediterranean, but it's one hell of a sight closer to the Med in terms of locks.

From St Jean to the sea at Port St Louis (Camargue) there's a mere 17 locks to negotiate, all downhill; whereas to get to St Jean de Losne the boater is likely to have negotiated more than 250 of them, most uphill. Just one canal alone – the Bourgogne – has 189 locks, although this one can be circumnavigated.

But it's all good fun, and for many of us – those who prefer a chill-out passage to an endurance test – a break en-route is no bad

thing. For my wife Janie and I, this factor alone governed our decision to overwinter at St Jean and, on arrival, we could see immediately that we'd made the right decision. There's an abundance of shops, from a DIY shed to three supermarkets (Casino, Intermarché and Lidl, Casino being a three-minute walk from the marina), and all the basic town shops too – butcher, baker and charcuterie. There's a choice of restaurants, three on the waterfront alone, and a take-away. The

restaurants we used offered excellent value, with wine sold by the pichet as well as the bottle. In short, St Jean is a pleasant non-tourist town that's well worth a visit in its own right.

Situated at the axis of the French inland waterway network, St Jean prospered in the past as a barge

community centre. Today, that tradition is continued, albeit for the leisure industry. Within the basin there are two boatyard/marina companies – Blanquarts and H2O. We selected the latter, although they are both well regarded and sensibly priced.

Within the pond, and benefiting from protection from two tree-covered islands, *Keppel* remained in the water over winter. When we returned the following April we found her pretty much as we'd left her. She was surprisingly clean and mould-free too, although she did accumulate a significant arachnid community – all of them outside, I stress – which meant we played 'Catch Boris' (the spider) for several mornings and evenings after our return. Being softies, we chucked them onto the pontoon – which means that half of them

probably walked straight back on again.

To soothe worries about how well *Keppel* was coping during winter storms, there was a webcam which we used two or three times.

The H2O community

H2O had a good community feel to it, one of the best we've experienced anywhere. The staff were helpful and friendly, and between the H2O shop, Blanquarts chandlery and Bricolage (DIY store) most needs were covered. We discovered a very active British ex-pat liveaboard community in H2O alone. They welcomed us as transient visitors – part-timers, I suppose – and we learned about the several daily activities they organise, one of which was involvement with a town classic boat restoration project. People helped each other, not just with skills but also with car trips to the station and that kind of thing. Our neighbours – a British couple – were kind enough to check *Keppel's* bilge once a month, an act for which we were very grateful.

On our arrival in late August we came to terms with the fact that lift-outs and hardstanding were prohibitively expensive when compared against coastal

ABOUT THE AUTHOR



Richard Hare grew up in Essex, where he learned to sail. He now lives in Woodbridge,

Suffolk, where he fitted out his *Golden Hind 31, Keppel*. He has sailed her via Biscay and the French canals to the Med and the Aegean – and back.



Brand new in 2015, the office and shop (left) leaves the old office block (right) clear to become a clubhouse



Well sheltered by the island behind, her sheerstrake lathered in wax for protection, *Keppel* sat out last winter in the basin at St Jean de Losne

equivalents. With a mud and gravel surface and a sort of portable water/shore power connection arrangement we became disenchanted with the idea, so we opted for what almost everyone else does – stay on the pontoon. This may be because, with no fouling to worry about, there's no compelling reason to be lifted out anyway. So, after 11 months in the fresh water *Keppel's* bottom had accumulated no more than a thin 'felt' feel to it, rather like a snooker table surface. Meanwhile, ventilation alone kept her interior dry as a bone.

Getting there

St Jean de Losne is about six to seven hours by car from Calais/Dunkerque, almost all on motorway – not bad for halfway to the Med geographically. Train links involve Eurostar to the Gare de Nord, and then from Gare de Lyon to St Jean takes about two to three hours with a quick change at Dijon. There's then five minutes by taxi to the Port de Plaisance, but this needs to be pre-booked. The office can assist with this.

There used to be budget flights to Dole, since discontinued alas, but who knows? Worth a check.

A good feature about travelling by car is that it's handy for a quick dash down, should it be needed. Similarly, after our April fit-out visit we combined it with a short holiday in the nearby Jura, an attractive part of France in the foothills of the Alps. Dole is the

gateway to the Jura, and we enjoyed a few days in a delightful chambre d'hôte (B&B) at Arbois, just a few doors up from Louis Pasteur's house and museum. It turns out he did a lot more than just invent pasteurisation! Did you know that the word 'vaccine' originates from his early trials and successes on cows (vaches)? The nearby salt mine is well worth a visit too.

The downside

The marina ablutions are a bit strange. Claimed to be temporary, the facilities consist of a floating mini Noah's Ark that houses one shower and three loos. Given the number of boats afloat (450 berths), it is amazing to report that there was seldom a problem gaining easy access.

Each year the yard manager, Vassili, explained that a new block was about to be built and, as I write, he tells me that it is currently scheduled for 2016. Meanwhile, the site that was prepared for the new loos has morphed into a brand new office and shop, thereby freeing up the old shop to become a clubhouse. Maybe the new ablutions will end up in this clubhouse?

Anyway, it all worked well enough for us and we were very content there – the whole place, that is, not just the loos.

■ For more information visit the **H2O St Jean de Losne website**, www.h2ofrance.com



The church at St Jean de Losne: roof tiles are typical of the Jura region

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The Kames Hotel prides itself on offering a warm highland welcome, with three bars and an outside seating area, lots of malt whiskies and real ales. The village of Tighnabruach is nearby.

Cruising Scotland: The Clyde



to Cape Wrath, published by Imray, says the north shore of the waterway linking the East and

West Kyles has long been regarded as a boating paradise.

■ For more information call the hotel on tel: 01700 811489.

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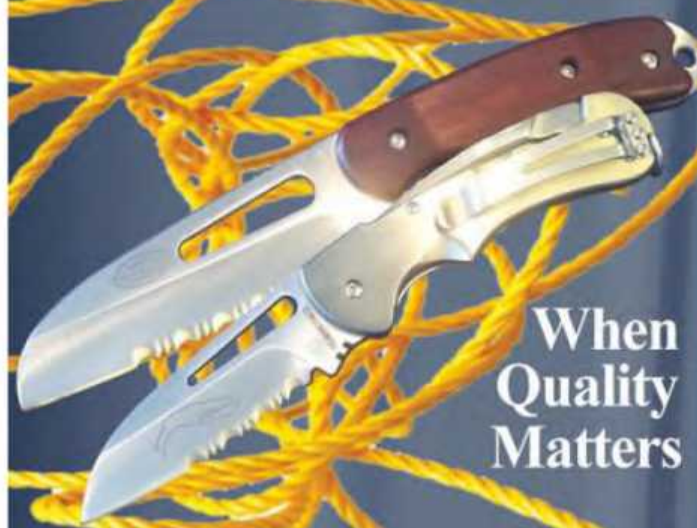
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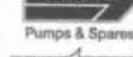
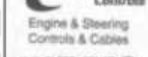
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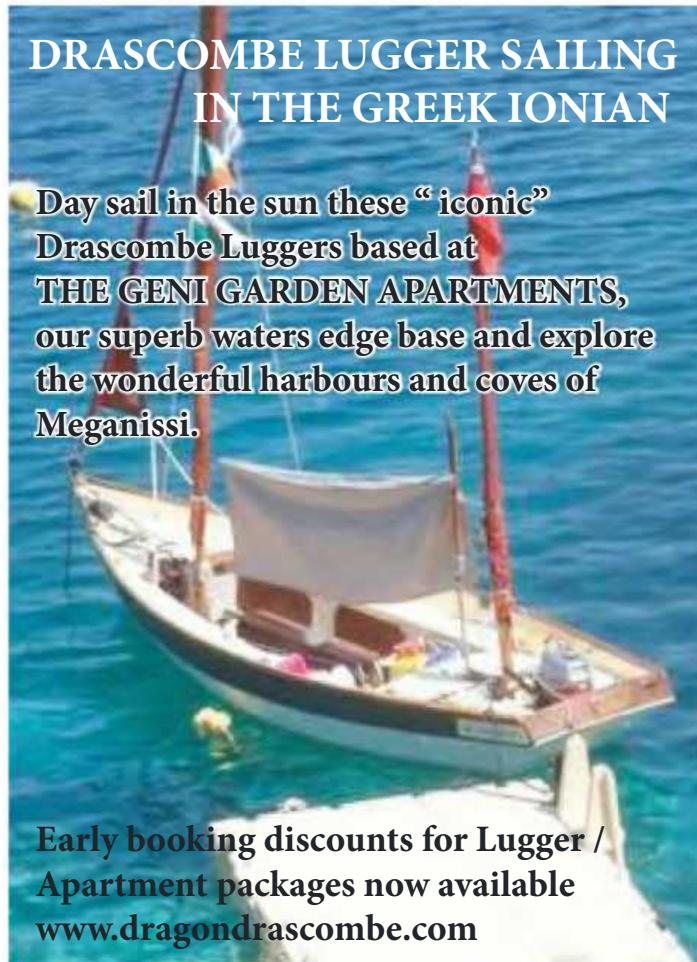
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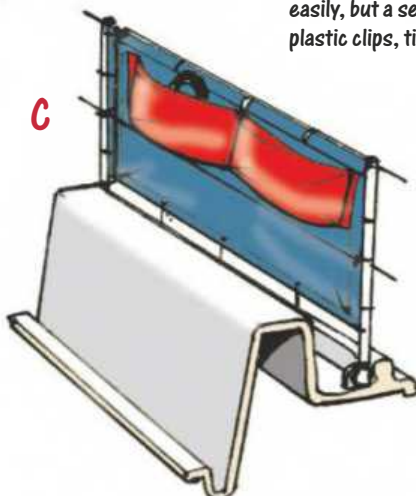
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B. They can be fixed on in all sorts of ways. Simple in-and-out-lashings keep the tension even and can be released easily, but a series of knots is more secure. Various plastic clips, ties, clamps and toggles also work well.

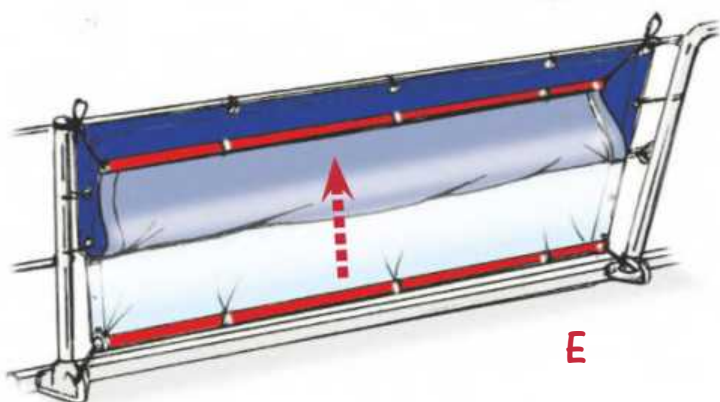
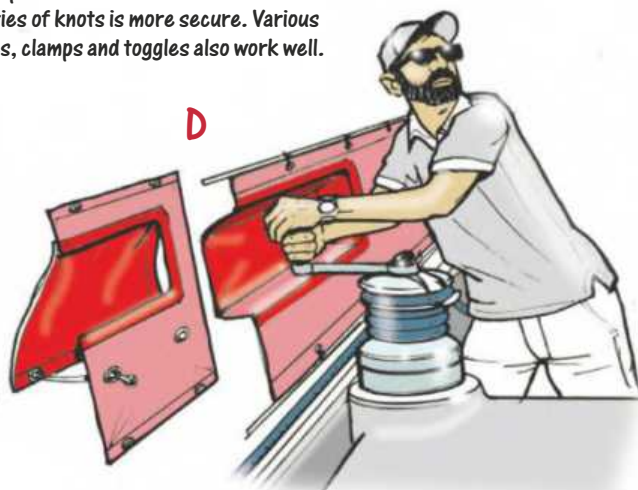
C. One useful addition is to sew on a couple of pockets, especially if there are no lockers built into the boat's cockpit coamings.

C



D. Sometimes it can be awkward to swing a large top-acting winch handle without grazing your knuckles on the canvas. On some boats they get around this by having cut-outs in the dodgers. The holes can then be covered with flaps, or by sewing on a generously-proportioned gusset.

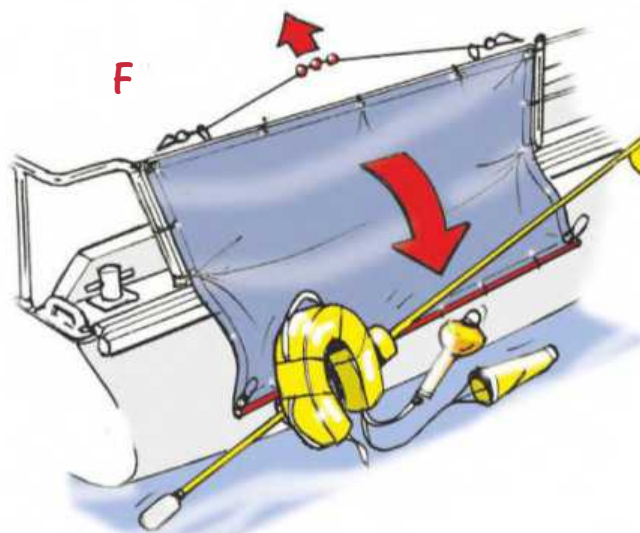
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E

E. A plastic pipe fixed along the bottom reduces the number lashings needed. It can be raised easily to let in a cooling breeze, or let out green water. Some people use weak fixings at the bottom that'll give way if you scoop up a wave.

F. A bag, formed from a doubled-up dodger, can hold all the MOB gear. Then, a quick pull on the rip-cord releases the top edge, and the whole lot drops.



F

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